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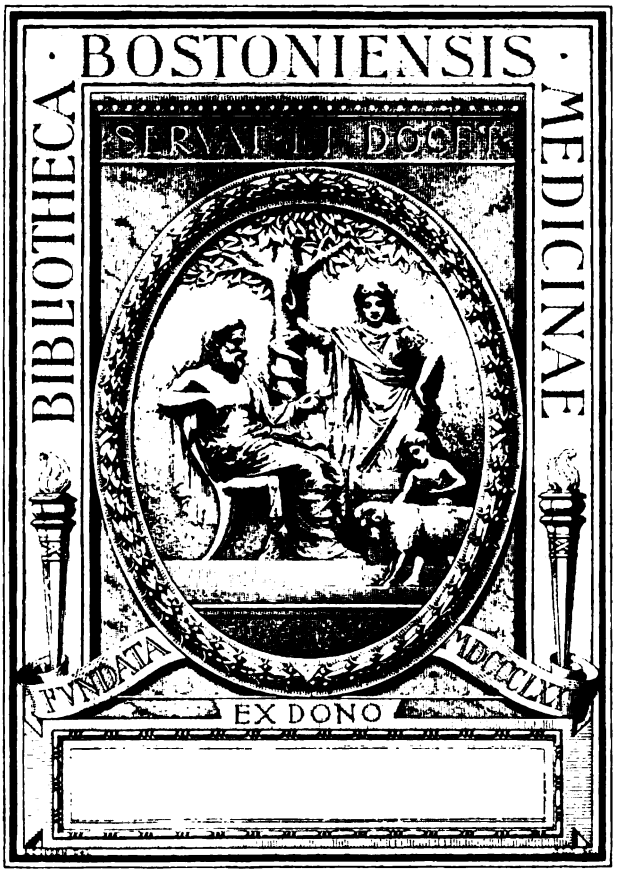
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VOLUME LXII

"The care of the human mind is the most noble branch of medicine."—GROTIUS.

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CENTENARY CHURCH, ST. JOHN, N. B., 1839.

The Building with Smoking Chimney, in Rear of Church, was Canada's First Asylum for the Insane. Opened November 14, 1835.

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PRESIDENTIAL ADDRESS—THE INSANE IN CANADA.[1]

BY T. J. W. BURGESS, M. D.,

Montreal, Canada.

Gentlemen: My first duty is to reiterate my thanks to you for having called me to this chair, a distinction I can attribute only to the fact, that in honoring me you sought to honor, not me alone, but the Canadian members of the association. "No man is born without ambitious worldly desires" says Carlyle, and surely there could not be a more laudable ambition than to become the president of this the oldest of American medical associations, a position of which Dr. John S. Butler said, on his elevation thereto, in 1870, "In my opinion, to be elected President of this Association, is the highest honor of the profession." Rarely, however, does gratified ambition bring peace of mind, and I, alas, have been no exception to the general rule. The thought of occupying a position that had been held by such intellectual giants as Woodward, Bell, Ray, Kirkbride, Butler, and Earle, all members of the "glorious original thirteen," beside many other illustrious men, abashed me—made me fully conscious of my inability to fill it properly. Nor did the sense of my demerit lessen as the days rolled by. On the contrary, the long list of presidents, whose names are familiar to us because of their attainments in psychological medicine, loomed continually before my eyes, added to which the task of to-day's address haunted me like an ever-lengthening shadow. I had but one thought to reconcile me to the greatness your generosity had thrust upon me. It was, that the kindness which prompted you to

[1] Delivered at the sixty-first annual meeting of the American Medico-Psychological Association, San Antonio, Texas, Tuesday, April 18, 1905.

elect me as your president would be extended so far as to induce you to overlook my shortcomings, and that if, in the matter of the address, I could not like my predecessors in office clothe my thoughts in

"Choice word and measured phrase, above the reach of ordinary men,"

you would at least take the kindly will for the imperfect deed.

In my search for a topic upon which to discourse, I fully verified the words of Terence "Nullum est jam dictum quod non dictum sit prius." Everywhere I found the fields of medico-psychology so well harvested by my forebears that there was apparently nothing left for even a gleaner. Nevertheless, a subject had to be selected, and I finally concluded that, as the oldest medical officer connected with the insane asylums of Canada, in point of length of service, I could not do better than tell you something about the development of our Canadian asylum system, the status of the insane in our Dominion, and what, in my estimation, are some of our most crying needs for the betterment of those so justly styled "the most unfortunate of all God's afflicted ones."

Evolution of the Canadian Asylum System.

Of the number or condition of the insane in Canada under the French régime, that is prior to its accession to England in 1763, I have been able to learn little or nothing. Doubtless their treatment differed in nowise from the cruelty shown them in all other countries at the same period. That they were not totally neglected is manifested, however, by the fact that, in 1639, the Duchess d'Aiguillon, niece of Cardinal Richelieu, founded the Hotel Dieu of Quebec for the care of indigent patients, the crippled, and idiots. As here employed, the term idiot probably refers to all forms of mental disorder, acquired as well as congenital, and the creation of this establishment is especially noteworthy inasmuch as it was not only the first move toward the proper care of the insane, but was the first hospital instituted in North America. Four years later, namely in 1643, Mademoiselle Mance founded the Hotel Dieu of Montreal to meet the same requirements.

For well nigh three-quarters of a century after the establish-

ment of British rule, the condition of the insane in the various Crown Colonies, which now make up the Dominion of Canada, was deplorable in the extreme. Each county seems to have cared for its insane as best it could by confining them in almshouses and jails. The poor lunatic did not appeal to the sympathies of the public,—a workhouse was good enough for him if harmless, a prison his proper place if dangerous. The thought that he might be cured, and that no effort should be spared to cure him, occurred to few if any. Bereft of man's noblest attribute, the mind, lunatics were regarded as little better than brutes, and were too often treated accordingly. While falling short of the Napoleonic Code, published in 1804, which openly classed the insane with beasts, and ordered the punishment of those who allowed "the insane and mad animals to run about free," the Law in Canada deemed them at least on a par with criminals. In proof of this witness an act, in force as late as 1835, which authorized any two justices of the peace, without any medical certificate, "to issue a warrant for the apprehension of a lunatic or mad person, and cause him to be kept safely locked in some secure place directed and appointed by them, and, if they deem it necessary, to be *chained*."

The first of the old British North American colonies to make special provision for its insane was New Brunswick, by the conversion, in 1835, of a small, wooden building in the city of St. John, originally erected as a cholera hospital, into an asylum for lunatics. This institution, the first of the kind in Canada, continued in operation for a little over thirteen years, under the medical supervision of Dr. George P. Peters, a native of St. John but a graduate of Edinburgh University.

Dr. Peters had no previous experience in the care of the insane, but, being energetic and deeply interested in the welfare of his charges, did exceptionally good work considering how he was handicapped. That he was in advance of his day, and fully recognized the importance of special training for the proper treatment of mental diseases, a fact so often lost sight of by governments and their appointees, is evidenced by his urging, though vainly, the Legislature to get a physician from England, one trained in the best schools of psychiatry, to take charge of the new asylum. The difficulties he had to encounter were many, not the least being

one that is equally common to most of us at the present day, that of finding suitable nurses. On this point he quaintly reports: "I find it very difficult to secure proper attendants, especially for the female patients. Those who apply for the place are coarse and ignorant, their only qualification for the position being good muscular development, and absence of all proper sensibility."

The following record preserved in the Sessions of the Peace minute-book gives a good idea of the results attained by Dr. Peters during the first thirteen and a half months of his incumbency. Of the thirty-one admissions, it says, "there have been discharged—cured, six; improved, five; to friends, not improved, two; died, four. Of the remaining 14, one is much improved, two perceptibly improved, and 11 without any visible improvement." Some of the details of the itemized accounts, contained in the same volume, are highly suggestive of the times and of the methods of treatment, in which blood-letting and restraint must have played a considerable part, and bathing and light been luxuries.

"W. McBay for twelve hogsheads of water (for one month), one pound, fifteen shillings.

"W. Hammond, for thirty pounds rush lights, ten pence per lb., one pound, five shillings.

"Harvie and Allen for eight tin bleeding cups and one tin pan, seven and six pence.

"D. Collins (sadler), for three hand mufflers, one pound, fifteen shillings.

"G. T. Ray, for twelve straight waistcoats at twenty shillings each, twelve pounds."

In 1848, this temporary refuge, the pioneer Canadian asylum, was abandoned, the inmates, ninety in number, being transferred to the present institution, the erection of which had been begun two years previously.

Ontario, or, as it was then called, Upper Canada, was the next of the provinces to make a movement toward providing for its insane, the old and recently abandoned jail at York, now Toronto, having been fitted up and opened as a temporary asylum in 1841. Prior to this, numerous attempts had been made in the House of Assembly toward the creation of an asylum, the Government going so far, in 1836, as to appoint a Commission to visit the United States for the purpose of obtaining information on the subject. The chairman of this Commission was Dr. Charles Dun-

combe, who afterwards, during the rebellion of 1837, became the leader of the rebels in the western part of the province, and only saved his neck from the hangman's noose, on the defeat of the movement, by making his escape, disguised as a woman, across the Detroit River into Michigan; this despite the fact that a reward of £500 had been offered for his apprehension. Dr. Duncombe's report is particularly interesting to us, because he therein gives an account of his visit to Worcester Asylum, Massachusetts, then under the superintendence of Dr. Samuel B. Woodward, who eight years later became the first president of this association, of which he had been also one of the originators. His institution was the one, of all those inspected, that best met the approval of the Commission, and the one, the general plan of which, they advised should be followed. In concluding his report, Dr. Duncombe thus interestingly outlines his views on the subject of lunacy and the object of the proposed structure. "The building is not designed for the cure of the ordinary diseases of the body, but 'to restore the disjointed or debilitated faculties of a fellow-creature to their natural order and offices, and to revive in him the knowledge of himself, his family, and his God.' The subject of lunacy has been until of late years less perfectly understood than any other complaint known to our country that is at this moment successfully treated, but thank Heaven that the disease of an organ of the mind is no longer considered a crime subjecting the unfortunate subject of it to imprisonment, punishment, and chains, and that with the exception of this Colony no other portion of America has their insane confined in their jails, and I am well satisfied this will not be the situation of these unfortunate persons longer than until their number and present cost of support is known, and the legislature have time to provide a suitable asylum for their relief."

The make-shift asylum, into which the old jail had been converted, was placed in charge of Dr. Wm. Rees, who had long urged upon the government the necessity for such an establishment, and continued in use up to 1850. At that date the patients were transferred to the present Toronto asylum, which, for twenty-two years after, was the field of labor of the venerable Dr. Joseph Workman, to whose wisdom much that is best in the present system of caring for the insane in Canada can be traced.

Kingston Asylum, generally known as Rockwood Hospital, was the second asylum born in the Province of Ontario. It had its birthplace in the stable of the old Cartwright mansion, which, in 1856, was fitted up for the reception of twenty-four female patients. Like its successor, the present structure, opened in 1862, it was originally designed for a criminal lunatic asylum, and as such the institution remained in charge of the Federal Government, an adjunct to the penitentiary, until 1877. In that year it was purchased by the Local Legislature and became one of the ordinary provincial establishments.

London Asylum, the third Ontario asylum in point of age, was, when opened in 1859, originally located in the old military barracks at Fort Malden on the Detroit River, and formed a branch of the Toronto institution which had become congested. In 1870, the present hospital, at London, having been completed, the patients were transferred there.

Of the other five public asylums in Ontario, that at Hamilton was originally built for an inebriate asylum, but was never used as such, being utilized instead for the reception of the insane, and opened in 1879. Mimico Asylum was first occupied in 1890, Brockville Asylum in 1894, Cobourg Asylum in 1902, and Penetanguishene Asylum in 1904. The Cobourg institution, for female chronic patients, was created by the conversion of Victoria College, the scholastic headquarters of the Methodist community prior to federation with Toronto University, into a hospital for the insane; and the Penetanguishene Asylum, which is for chronics of both sexes, was formerly a reformatory for boys.

Ontario also possesses an asylum for idiots. It is situated at Orillia, where it had its inception, in 1876, in a building originally designed for an hotel. This structure was replaced by a new and modern establishment in 1887.

In the Province of Lower Canada, now Quebec, the Quebec Lunatic Asylum, formerly known as Beauport Asylum, is the oldest of the institutions for the insane, the progenitor of the present structure having been opened, during 1845, in the old manor-house of the Seigneur of Beauport, which stood about a mile from the present establishment. Its creation was due to Dr. James Douglas, an uncle of my immediate predecessor in this

chair, Dr. Joseph Morrin and Dr. Charles J. Fremont, but it is now the property of the Sisters of Charity.

The second of the Quebec asylums, L'Hopital St. Jean de Dieu, or, as it is usually called, Longue Pointe Asylum, is situated a few miles east of Montreal, and also belongs to the Sisters of Charity. It originated in a very humble way in 1852, its capacity at that time not exceeding twenty-five patients. This being found quite inadequate to meet the ever-increasing demands upon their charity, the Sisters, with the sanction of the Government, determined to take up the work of caring for the insane on a greatly enlarged scale. The result was the erection of a new St. Jean de Dieu Asylum, which was opened in 1875. This institution was completely destroyed by fire in 1890, no less than seventy-five patients and five Sisters losing their lives in the conflagration. Undeterred by this disaster, the Sisters lost no time in beginning the erection of the third St. Jean de Dieu Asylum. This, the present establishment, which is fully up-to-date in construction and equipment, was opened in 1901.

The third Quebec institution, rightfully called the Protestant Hospital for the Insane, though generally spoken of as Verdum Hospital, was founded by a number of the charitably disposed Protestant citizens of Montreal for the relief of their co-religionists then confined in Beauport and Longue Pointe asylums. It was opened for the reception of patients in 1890.

Quebec has in addition two institutions which receive idiots as well as some aged and infirm paupers. These are L'Hospice St. Julien, located at St. Ferdinand d'Halifax, and Baie St. Paul Asylum, situated at Baie St. Paul. Both belong to the Sisters of Charity, the former having been opened for the reception of idiots in 1873, the latter in 1890.

Prince Edward Island stands fourth, and Nova Scotia fifth, on the list with regard to the date of beginning special provision for the insane. The hospital of the former dates back to 1847, and of the latter to 1858, since which time Nova Scotia has increased its accommodation for the mentally defective by the creation of a system of county asylums, and combined county asylums and poorhouses. An interesting point in connection with the Nova Scotia Asylum is that to it pertains the honor of having had its site selected by the well-known philanthropist Miss Dix, of whom

it is said in Tuke's "Dictionary of Psychological Medicine": "Although, in every country, men and women and the medical profession have been ready to promote the interests of the insane, the name of Dorothea L. Dix stands foremost among all. Her efforts in improving the condition of the insane were not confined to her native State of Massachusetts, but extended to other States and distant lands. Her life was devoted to their interests, and it is stated that no less than thirty asylums owe their establishment directly or indirectly to her persistent efforts."

The first Manitoba Asylum, now located at Selkirk, was originally established in 1871, at Lower Fort Garry, in connection with the penitentiary. One of the old stone storehouses of the Hudson Bay Company, formerly used for the confinement of Lepine, the notorious Louis Riel's Adjutant-General, was fitted up for the purpose. The second asylum, situated at Brandon, began work in 1891.

The year 1872 witnessed the birth of the British Columbia institution, when an ancient wooden building on the Songhees Indian Reserve, outside the city of Victoria, originally built for a small-pox hospital, was reopened to receive lunatics. The population having outgrown these primitive quarters, it was decided to erect a new asylum on the main land, close to the town of New Westminster. This was done and the patients removed thereto in 1878.

Of the superintendents connected with the bygone struggles of these beneficient institutions much might be said, but the limited time at my disposal forbids the eulogiums they so justly deserve, even were my pen equal to the task. No words of mine could do justice to such men as Dr. Workman, easily, "*primus inter pares*," and fittingly styled by Dr. Tuke, "The Nestor of Canadian alienists"; Dr. Henry Landor, whose rare qualities of heart and mind fitted him so eminently for his position; Dr. R. M. Bucke, to whom is due the introduction of the non-restraint system into Canada; Dr. W. G. Metcalf, who by his sad and untimely death added another to the goodly list of physicians who have perished at the hands of those whom they sought to benefit; Dr. J. R. DeWolf, who was foremost in the early care and treatment of the insane in Nova Scotia; Dr. E. E. Duquet, who died worn out by his labors in striving to reform the Longue Pointe

Asylum; and Dr. A. Vallée, whose advanced views did so much to improve the Quebec Asylum. The blessed results of the labors of such men can never be fully estimated, their works being truly:

"Deeds which are harvest for Eternity."

Status of the Insane.

At the present time Quebec is the only one of the provinces of the Dominion in which there is no State institution for the care of the insane. Though vastly improved in every respect and much more strictly supervised by the Government than when Dr. Tuke visited them, in 1884, and so graphically portrayed the then existing evils, the two largest hospitals, St. Jean de Dieu and Beauport, are still proprietary establishments and, as such, still open to the criticisms thus forcibly expressed by that distinguished alienist in his work, "The Insane in Canada and the United States": "Far be it from me to attribute to these Sisters of Charity any intentional unkindness or conscious neglect. I am willing to assume that they are actuated by good motives in undertaking the charge of the insane, that they are acute and intelligent, and that their administrative powers are highly respectable. Their farming capacities are, I have no doubt, very creditable to them. It is not this form of farming to which I have any objection or criticism to offer. In the vegetable kingdom I would allow them undisputed sway. It is the farming out of *human* beings by the Province to these or any other proprietors against which I venture to protest. . . . It is a radical defect—a fundamental mistake—for the Province to contract with private parties or Sisters of Charity for the maintenance of lunatics. Whatever may be the provision made by private enterprise for patients whose friends can afford to pay handsomely for them, those who are poor ought to have the buildings as well as the maintenance provided for them by the Legislature. They are its wards, and the buildings in which they are placed should belong, not to private persons, but to the public authorities, with whom should rest the appointment of a resident medical officer."

No less pronounced in his condemnation of the "farming-out" system is a later writer, one of our greatest authorities on all appertaining to insanity and the care of the insane, Professor

Kraepelin. This world-renowned alienist says of it, in an article published some five years ago: "It is not only unworthy of the State, but in the long run it is also dangerous to entrust the care of such institutions to promoters, who are working only on their own responsibility, be they laity or clergy. The best ordinances of State supervision cannot do away with the danger which attends the transference of the insane from the care of the public officials to that of private individuals. Even if State inspection were well carried out, which cannot be guaranteed, only the more apparent abuses could be guarded against. The management of the institution would still be carried out in accordance with the particular views and wishes of those who were in charge and, as a rule, to the disadvantage of the patients."

Following the publication of Dr. Tuke's article, the Medico-Chirurgical Society of Montreal held a meeting at which, among others, the following resolutions were unanimously passed:

"That the 'farming' or 'contract' system either by private individuals or by private corporations, has been everywhere practically abandoned, as being prejudicial to the best interests of the insane, and producing the minimum of cures.

"That in the opinion of this Society all establishments for the treatment of the insane should be owned, directed, controlled, and supervised by the Government itself, without the intervention of any intermediate party."

Spite of these and other vigorous protests the system remains unchanged, and before Quebec can be counted in the foremost line, where it ought to be, the Province must own as well as supervise its institutions for the dependent insane.

One outcome of the furore excited was, however, the founding of the Protestant Hospital for the Insane, an incorporated charitable institution, which, while paid by the Government for the maintenance of public Protestant patients, is safeguarded by the leading clause in its charter of constitution. This stipulates that the conduct of the establishment shall be vested in a board of management elected by the governors, and that all moneys received by the corporation, from whatever source, shall be expended upon the institution and its inmates. As a matter of fact, ever since the opening of the hospital, the per capita cost of public patients therein has not been less than fifty per cent more than the Government allowance for their keep, the difference hav-

ing been made up by the revenue derived from private patients and the bequests of the charitably disposed.

The Province of Nova Scotia, though possessed of as well-managed a State asylum as could be desired, is yet behindhand in that it has since 1886, sanctioned the erection of county asylums, and in many cases combined county asylums and poorhouses. To these can be transferred the harmless insane from the provincial institution, and to them can be sent direct, idiots, non-violent epileptics, and cases of chronic insanity refused admission on statutory grounds to the State Asylum. At the present time there are eighteen of these structures, which, according to the Report of Public Charities for 1904, house sane adults, children, insane patients, imbeciles, and epileptics. Each is governed by a committee, the immediate management being entrusted to a keeper and a matron, and there is a visiting medical officer attached. These establishments have been erected in pursuance of a plan outlined by Dr. Reid, formerly Superintendent of the Provincial Asylum, though a Nova Scotia medical friend of mine, well acquainted with the system, contends that it was invented by the devil. The scheme was necessitated by the pressing need of additional room for the insane, and the financial inability of the Province to undertake the erection of another public hospital. It is only fair to Dr. Reid, however, to state that this was but one of four alternative suggestions made by him, and that it was the one he considered the least desirable, although the cheapest way to provide the required accommodation.

That county care is cheaper I will not gainsay, but does it best meet the demands of humanity, which, after all, is the true standard to be adopted by any right-thinking community? That it does not, seems to be the general trend of the most advanced scientific opinion, and the following resolution, adopted at the sixth meeting of this association, held at Philadelphia in 1851, still holds good:

"Resolved, That it is the duty of the community to provide and suitably care for all classes of the insane, and that in order to secure their greatest good and highest welfare, it is indisputable that institutions for their exclusive care and treatment, having a resident medical superintendent, should be provided, and that it is improper, except from extreme necessity, as a temporary arrangement, to confine insane persons in county poorhouses or other institutions, with those afflicted with or treated for other diseases or confined for misdemeanors."

Not a few of the chronic insane are as difficult to manage as the acute, and such being the case, it is hard to imagine any plan of county care where abuses will not creep in as a result of the desire to lessen the per capita cost and the absence of constant medical supervision. As practised in the State of Wisconsin it seems to be as well conducted as it is possible for such a system to be, and yet Dr. Burr, our worthy vice-president, who is a just and honest man as well as a careful observer, after a personal inspection of the system there, published, in the October, 1898, number of the AMERICAN JOURNAL OF INSANITY, a scathing denunciation of its inefficiency.

Many of the worst horrors connected with the treatment of the insane during the last half-century were consummated within the walls of county almshouses. In New York, where the practice of transferring cases which failed to recover in a certain time from the Utica Asylum to the county poorhouses was in vogue for nearly thirty years, and where the county asylum system flourished for over eighteen years, the abuses which seem to be inseparable from almshouse and county arrangement so aroused public opinion that both methods were abolished, by the passage of the State Care Act of 1890.

The State of New Hampshire has also lately recognized the injustice of this method of caring for the insane, and, in 1903, passed an act revoking county care, and providing for the removal of all lunatics confined in almshouses to the State hospitals within a period of six years.

That those connected with and so best qualified to judge of the working of the Nova Scotia system are not themselves enamoured with it may be judged from the 1903 Report of Public Charities. Therein, the inspector, Dr. George L. Sinclair, an alienist of repute and a former superintendent of the Provincial hospital, says:

"The plan of county care adopted in this province has many grave objections. In a properly equipped and well officered local asylum, reserved for the exclusive use of insane or imbecile inmates, the objectionable features are fewest. The scheme of associating in one house both sane and insane persons is the most objectionable and unsatisfactory.

"Unfortunately our law permits this to be done, provided the building is made suitable for both classes and for both purposes to the satisfaction of the Governor-in-Council. The difficulties to be overcome to make such a plan of care unobjectionable pertain quite as much to the structure of the municipal mind as to that of the building.

"It is most unfair to the sane members of such a household, whose only affliction is poverty, to compel them to associate with the insane and imbeciles, who are not only irresponsible, but may be a source of positive danger to their companions in misfortune, and it is distinctly unjust to the insane inmates to attempt to care for them with the limited oversight and attention which the small staff of an almshouse can give.

"I have yet to find a single keeper or matron of an asylum to which the mental defectives are sent to associate with the paupers, whose experience in looking after the two classes is sufficient to give the opinion any value, who does not think the mixing of the two kinds of inmates most undesirable. When it is done there is either a dangerous amount of liberty granted the defectives, or they are isolated and secluded to an extent that means positive neglect, and leads to distinct deterioration and the formation of bad habits. It cannot be otherwise. The staff of an ordinary almshouse usually consists of a keeper and a matron. The former has charge of the farm and the latter of the housekeeping. When at his work the keeper must either take the insane men with him or leave them at home. The first is often impracticable, and the second unsafe unless the patient is locked up. This more or less frequent seclusion always has an evil effect in causing the insane person to fall into bad habits. Some times most objectionable and severe mechanical restraints are used, and nothing but harm results."

In the Province of New Brunswick, it is much to be regretted that the Government, on account of the overcrowded condition of the Provincial hospital, is contemplating a resort to the Nova Scotia system. At the last session of Parliament legislation was passed providing for the examination of all patients therein by a commission composed of the Medical Superintendent and two other doctors. When the work of the commission, which began its labors in November last, is completed, a report is to be made to the Government with a view to the selection of those who, being supposed to be harmless, can be sent back to their friends or to the county almshouses. To carry out such retrograde legislation will be to sully the record of a province which has heretofore always steadfastly declared against the incarceration of lunatics, even temporarily, in prisons or poorhouses,—a province which can boast with pride of having been the first of the British North American colonies to provide special accommodation for its dependent insane.

At present, in New Brunswick, perhaps the gravest existing defect in connection with the insane is the method, or rather lack of method, of commitment to the Provincial hospital. The safe-

guarding of the liberty of the subject seems to be little heeded, and a patient can be conveyed to it with only a line from a doctor. No thought is given to advising the hospital authorities beforehand that a patient is coming, and often no history whatever of the case is furnished. The Medical Superintendent, however, informs me that this matter is to be remedied at once, and that the present year will see the manner of commitment more in consonance with the modes adopted in other civilized countries.

Ontario, as the wealthiest of the Provinces, has of course been able to outstrip the others, and in its care of the insane has always endeavored to keep up with the advance of science. Its asylums are State institutions in the fullest sense of the word. In the majority of cases the patients are maintained entirely at Government expense; in other cases, where able to do so without hardship, the friends are charged a rate that covers the bare cost of keep. While all its hospitals are good, Rockwood is certainly the foremost, ranking to-day among the most advanced institutions for the treatment of the insane in America. Whether it be that its presiding officer has a more persuasive tongue and so can better influence the "powers that be" I cannot say, but assuredly it has accessories that are elsewhere lacking,—to wit, a beautiful nurse's home, and several small cottages for the segregation of tubercular patients. The varieties of employment provided for the patients there are, as they should be, numerous and diversified, and physical culture classes are one of the features of the establishment. In addition, those who have a taste for music are instructed in it under a qualified teacher, and there is also a school modeled after that in the Utica Asylum. At Rockwood, too, it is worthy of record, was established Canada's first training school for asylum nurses, and the first separate building, or infirmary, on the continent, for the treatment of lunatics afflicted with additional ailments.

Prince Edward Island has a Provincial hospital for its insane, but idiots and imbeciles are sheltered in the Provincial poorhouse, those who become dangerous being transferred to the insane hospital.

In Manitoba and British Columbia the asylums are State institutions and well conducted, though, at present, sadly hampered by the constant and pressing necessity of providing sufficient room,

owing to the mass of immigrants that has been flowing into those Provinces during the last two or three years. The Manitoba hospitals receive imbeciles, but idiots are sent to the Home for Incurables, also a Provincial institution, located at Portage la Prairie. British Columbia has no special provision for idiots or imbeciles. When utterly unmanageable at home they are received into the insane asylum.

The Northwest Territories having no hospitals of their own, by special arrangement with the Dominion Government, all cases of insanity occurring in those districts are cared for in the provincial asylums of Manitoba.

Number of Insane.

In 1901, according to the census of that year, there were in the Dominion of Canada 16,622 persons of unsound mind, being a ratio of 3.125 per thousand, or about one in every 319 of a population numbering 5,318,606 souls, exclusive of the unorganized territories. Of these 16,622 defectives, 10,883 were inmates of asylums or other institutions, making a percentage of .642 under care.

The Provinces as regards the number of their insane stood as follows: Prince Edward Island 361, a proportion of 3.496 per thousand; Ontario 7552, or 3.459 per thousand; New Brunswick 1064, or 3.213 per thousand; Quebec 5297, or 3.212 per thousand; Nova Scotia 1403, or 3.052 per thousand; Manitoba 464, or 1.818 per thousand; British Columbia 301, or 1.684 per thousand; Northwest Territories 180, or 1.132 per thousand.

With respect to custodial care, British Columbia ranked first, having under care, at the close of 1901, no less than 94 per cent. of the total number of those mentally incapacitated; Manitoba came next with 77 per cent. in safe-keeping; Nova Scotia stood third with 71 per cent. sheltered; Ontario was fourth with 69 per cent. in asylums; Prince Edward Island was fifth with 61 per cent. provided for; Quebec and the Northwest Territories were equal with 58 per cent. under care; and New Brunswick was eighth with 52 per cent. housed.

The following table shows the changes indicating increased custodial care, or otherwise, on the part of the several Provinces, in the decade extending from 1891 to 1901. By this it will be seen

that there has been a marked advance in all with the exception of New Brunswick, which remains unchanged.

Provinces.	In Asylum, 1891.	In Asylum, 1901.
British Columbia	90 per cent.	94 per cent.
Manitoba	55 "	77 "
New Brunswick	52 "	52 "
Nova Scotia	36 "	71 "
Ontario	58 "	69 "
Prince Edward Island	38 "	61 "
Quebec	50 "	58 "
Northwest Territories (housed in Manitoba asylums)		58 "
Canada	54 per cent.	66 per cent.

Increase of Insanity.

Spite of the provision made for the care of the insane, from every Province comes the cry for additional accommodation. Year by year the number of lunatics, imbeciles, and idiots to be supported and cared for by the State is being largely augmented, and it has become a burning question whether something cannot be done to lessen an evil which imposes upon the community an enormous load of taxation for the maintenance of a large and constantly increasing multitude of those mentally afflicted. Canada, in common with the rest of the civilized world, has of late years shown a decided increase in the percentage of her insane population. Of course it is easy to be led astray by statistics compared without just qualification. The very agencies created for the care of the insane lead to an apparent increase in their number. With well-appointed asylums conducted on enlightened lines, aided by Government grants and private charity, hundreds of patients who might otherwise be uncounted, leave their homes to swell the enumeration of the insane. Still, with all allowance made for this, it is the consensus of opinion that insanity is on the increase in Canada as elsewhere. That such is the case is fully borne out by the census returns, which, though lessened in validity by the fact that the figures they furnish are in great measure dependent on voluntary information, are yet in this case a fair index of the true state of affairs, because any false statements made would be in the line of lessening the number of de-

fectives. From this source we find, that while in 1891 there were 13,342 insane persons in a population of 4,719,893, in 1901 there were 16,662 in a population of 5,318,606, being an increase, in ten years, of nearly twenty-five per cent. in the number of lunatics whereas the increase in the total population was less than thirteen per cent.

The causes of this increase are manifold. The methods of modern life and the modern race for wealth undoubtedly play an important part in it. Our high-pressure civilization does not come to us without attendant woes. With the change and increased comfort in the mode of life of the great bulk of the people, their susceptibilities have been augmented, and their nervous systems have been laid more open to the unkind influences of material and moral forces. But while these and other causes play a part in the production of mental disorder, it is a small one in comparison with that played by heredity. From time immemorial it has been recognized that the great predisposing cause of insanity is hereditary taint, and as time rolls on, and we are able to make more careful inquiry into the influence of hereditary predisposition, the truth of this old-time belief becomes more and more evident. Unfortunately we are not in a position to say exactly what amount of the mental obliquity met with is due to transmitted weakness. The statistics of heredity vary widely, and this variation is chiefly in direct ratio to the prevarication practised by the relatives of the insane. Not one of us but is well acquainted with the way in which people, even in the lower ranks of life, endeavor by every means to keep us ignorant of what they consider to be a stigma on the family. Almost every authority on mental diseases has commented on this, one writer going so far as to compare the difficulty experienced in getting at the truth in such cases, to that which might be expected in dragging from an erring woman a confession of her frailty. Why brain disease should be regarded as more disgraceful than disease of the lungs or any other organ of the body, or why the fact of insanity being in a family should be looked upon by the public as tantamount to an acknowledgment of criminality, is hard for us to grasp. Such, however, is the fact, and until the masses are educated out of such erroneous beliefs, friends will continue to lie about their antecedents most unblushingly. Often I have

known cases where the relatives have positively asserted that there was no trace of insanity in their family history; and often I have afterward discovered that it had been well marked for generations. I well remember a lady, widely known for her Christian principles, coming to see me about receiving her daughter as a patient. A prognosis in the case was of importance, and I was asked to give as definite a one as possible. Naturally I asked as to any possible hereditary taint. My lady was firmness itself in her denials. In the course of further conversation, however, she happened to mention that her brother, who had been very fond of the insane girl, was dead, and added, "Perhaps it's as well after all that he is." It struck me at once that there must be something behind this expression of opinion, and my question, "Why so, Madam?" elicited the answer, "Well doctor, you see for over a year before my brother shot himself he was always worrying about Mary's future welfare." Needless to say the hospital registers showed heredity as a definite predisposing factor in the case.

But it is unnecessary that I should dwell upon the question of heredity as a cause of the increase of insanity. It and the marriage question were fully and ably discussed by Dr. Blumer in his presidential address delivered at Washington two years ago. I shall but strengthen, if that be possible, what was then said, by a quotation. It is from an address on the prevention of insanity given by Dr. G. F. Blandford, as President of the Psychological Section of the British Medical Association, in 1894. On that occasion Dr. Blandford stated: "I have long been of the opinion that insanity is to be prevented chiefly by limiting the propagation of this most fearful disease through the union of affected persons. I am convinced that the only way to really diminish and finally stamp out insanity is by so educating public opinion, that those who have been insane or are threatened with insanity, shall, in the face of such public opinion, abstain from bringing into the world children who must certainly contain in them the potentiality of insanity, and so will hand on the heritage from generation to generation till the race dies out."

Instead, let me call your attention to another topic, briefly referred to by Dr. Blumer, in the line of prevention of the increase of insanity—the exclusion of defective immigrants. I do so for

two reasons. Firstly, because during the past two years the influx of strangers into Canada has been so enormously increased; and secondly, because Canadian immigration laws being much less stringent than those of the United States our land is being flooded by a class of degenerates, many of whom, if not already insane, soon become so.

That a country so vast as ours should be much more densely peopled is a "consummation devoutly to be wished," but the question of number, desirable as it may be, is secondary to the character of the people who are being added to our population. The sturdy agriculturists and artisans of the British Isles, healthy alike in body and mind, always furnish a welcome addition to our ranks, but unhappily quite a large number of the immigrants brought to us are of a low standard of mentality, some of them even having been inmates of asylums before coming to this country. Such a condition, amid new environments and under new conditions of existence, is almost sure to lead to mental strain and insanity. The result is that these incompetents, many of them consisting of the scum and dregs of an overcrowded European population, are crowding our Provincial hospitals, especially those of Ontario, Manitoba, and British Columbia, to which Provinces immigration has been largest, and those contiguous to large seaports, such as Montreal. Most of our institutions have a larger percentage of foreigners than is found among the native population, and while the greater number of the foreign-born inmates are legitimately there, having broken down mentally after they had earned a residence, there is in every asylum a proportion who should never have been brought to our shores. Some of these have come of their own accord, but it is evident from the statements of the patients themselves that in certain cases parochial boards, benevolent societies, municipalities, and even relatives, have sent out persons simply as the cheapest way of getting rid of them. The cost of a ticket is small compared to a lifetime's maintenance in an asylum, a poorhouse, or at home. The late Dr. R. M. Bucke in giving his evidence before a Commission appointed to inquire into this subject, thus forcibly and truthfully expressed himself: "There are associations formed in England for bringing out to Canada what are called gutter children from the slums of England, Scotland, and Ireland. Thousands are brought

out by these organizations. This is scandalous and should not be allowed to go on. These people might as well collect smallpox and typhoid fever and send them out. It is just adding so much more to the number for which we have to provide, because so many of them are degenerates." But a few months ago it was proposed in London to form an organization for the emigration on a gigantic scale of British pauper babies and young children, and a meeting was convened at Mansion House under the auspices of the Lord Mayor to discuss the subject. Canadians generally and naturally object to the establishment of British workhouse farms in Canada under the control of the British poor law guardians for the reception of English foundlings, and, I am thankful to say, the Canadian Government withheld its approval of the scheme.

As typical of the class of persons sent out by their friends to get rid of them, let me read you a description of a batch of these defectives who had become hospital residents and were deported to Liverpool. It is from a report of the asylum in British Columbia, where this custom has been very common, I suppose on the principle that the farther away a ne'er-do-weel is shipped the less likelihood of his return. "All these cases were illustrations of a practice too much in vogue in Great Britain, of shipping off to the colonies weak-minded young persons who are unmanageable at home, and unable to make a career for themselves, or earn a livelihood there. 'He has continued his wild and reckless conduct, and has now been shipped off to the colonies,' is a phrase made use of in the *Journal of Mental Science,* in a description of a case of the kind now in question. But if a patient of the sort here described is unable, with the assistance and supervision of his friends and relatives, to steer a straight course and make a position for himself in the Old Country, still less is he likely, when left to himself, to be able to cope with the struggles and difficulties of Colonial life. Of the five cases above mentioned, in one the patient was of feeble intellect and the insanity strongly hereditary, in another the patient was obviously weak-minded originally, a third was a pronounced epileptic with consequent mania, and two others, a brother and sister, suffered from strong family taint. The brother had been previously for three years in an English County Asylum, and the sister had suffered from an attack of in-

sanity before coming out here. The brother had only been four days in the Province when he again became insane and was sent to the asylum. He was two years and one month in the Province, the whole of which time, except four days, he spent in the asylum at the expense of the Government.

" It is hard upon the Colonies that the mother country should 'ship off' these waifs and strays, these victims of 'borderland insanity,' to become, as they almost inevitably must do, when thrown on their own resources out here, confirmed lunatics, who have to be maintained at the expense of the community."

That Canada is being made a " dumping ground " for the degenerates of Europe it needs only a glance at our general and asylum statistics to show. Few, however, realize the extent of the burden thus imposed upon our charities. Only those whose duty brings them in contact with the defective classes can fully grasp how urgent it is that greater restrictions should surround the admission of undesirable immigrants. Even conservative England, which has always prided itself on being held wide open as a refuge for the poor and oppressed of all nations, is becoming aroused to the necessity of raising a barrier against unrestricted immigration. The evils have become so palpably evident there, during the past few years, that the average Briton, once heartily in favor of admitting any and every one to his country, is now crying out against it, and the last Royal Commission on Alien Immigration, which was appointed in 1902 and presented its report last autumn, recommended the establishment of an immigration department, similar to that of the United States, for the purpose of debarring and repatriating " undesirables."

In proof that what I have said is no exaggeration of the ill effects attendant upon immigration insufficiently safeguarded, let me call your attention to some figures bearing on the subject. By the census of 1901 the population of Canada was 5,371,315, the number of foreign-born being 699,500; the total of the insane was 16,622, and of these 2878 were foreigners. From these returns it will be seen that a little over thirteen per cent. of the general population—that is to say the imported element—furnished over seventeen per cent. of so-called Canadian lunacy. Stated in another form, if the native Canadians alone are considered, there is

one insane person in every 339 of the population; while the proportion among the foreign element alone is one in every 243.

If further evidence were needed I would say that during the year 1903 there were admitted to Canadian asylums 2213 insane persons. Of this number 1726 were born in Canada. The remaining portion, 487, representing 22 per cent. of the admissions, was foreign-born. At Verdun, 2048 patients have been received since the opening of the establishment, and of this number 40 per cent. were of foreign birth. In the same institution there are at the present time no less than thirty persons in a population of 460 who, if subjected to anything but the most cursory examination, would never have been allowed to set foot in the country.

The cause of this load being foisted upon us is not hard to find. It lies in the laxness of our immigration acts which do not demand a certificate of good bodily and mental health from each person landing, and which limit the period during which such parties may be deported to one year.

No effort should be spared to relieve the Dominion of such an incubus, and the remedy is in our own hands. It consists in the passing of stringent laws providing for a full knowledge of the past history of every alien seeking our shores. The true place to prevent the coming of the dangerous immigrant is not at the port of entry but at that of departure. Each person preparing to emigrate to Canada should be rigidly examined, by salaried medical officers appointed by the Dominion Government, as to his mental fitness at the time of examination, and should also show proof that he has never been insane or epileptic, and that his parents have never been affected with insanity. If found to fulfill all the legal requirements, a sworn certificate, containing his full personal description and vouching for his mental and physical health, should be given him. Without such a certificate he should not be allowed to land, and the vessel bringing him should be obliged to take him back on its return trip at the expense of the owners. The health officers at our ports should, in addition, be clothed with authority to reject any immigrant on arrival if circumstances developed during his passage should demand it, and instead of one year, the period of probation during which an immigrant might be returned to his own country if afflicted with in-

sanity, unless surely due to causes arising after his arrival, should be extended to two or even three years.

Doubtless such legislation would be bitterly opposed by steamship companies as tending to lessen the number of their steerage passengers, and by irresponsible emigration agents who send out every soul they can for the sake of the commission received on ocean and railway tickets. But the interests of the State should be paramount to such selfishness, and the Government should insist that Canada, while a hospitable refuge for the deserving poor, be not made an asylum for the diseased and defective.

Our Requirements.

Canadian requirements, speaking generally, are many. The most pressing, to my mind, are separate accommodations for idiots, epileptics, inebriates, and the criminal insane; proper means for the segregation of the tubercular; some provision for the temporary relief of friendless convalescents; and the abolition of political patronge in asylum affairs.

In the matter of proper and sufficient accommodation for idiots and imbeciles Canada is woefully behindhand, there being in the whole Dominion, not a single institution for these classes conducted on the lines that modern science and experience have found most satisfactory and successful. In all the Provinces, with the exception of Ontario, the feeble-minded, which is a generic term now used to include all degrees of idiocy and imbecility, if provided for at all, are housed in poorhouses and other establishments which provide for sane persons as well, or are mixed up with the insane population of the lunatic asylums. Ontario alone has attempted any adequate provision, and even she, from a spirit of false economy, has allowed a once promising institution to drift backward.

The care, training, and education of the mentally defective is an accepted public duty, and should be undertaken by the State at public cost, at least to the extent of providing the necessary institutions and schools for their care and teaching. Mere custodial care, even if provided in separate establishments, does not meet the requirements of the case, it being admitted by all who have made the interests of this class a life study, that any effort made in the direction of bettering their condition is useless unless

a training school is combined with the custodial asylum. Surely it is just as essential to educate the imbecile as it is to educate the deaf-mute or the blind. To allow him to grow up without education or "habit-training," is simply to allow him to degenerate into a repulsive, helpless creature, often so brutal in his propensities that, for the protection of the public, he has to be placed in custody. Of the milder types, many of the boys commit crime and find their way to reformatories; the girls fall from the paths of virtue, become mothers, and bring forth children more feeble-minded than the parent. The education, however, as well as the method of imparting it, must be made to suit the incomplete mental organization with which we have to deal. Even the least weak-minded are generally unable to profit, to any extent, by the instruction of ordinary schools, and often they suffer unmerited hardship at the hands of teachers, who, ignorant of the mental defect, attribute backwardness to laziness or perversity. So well is this fact recognized that the public schools of New York, Philadelphia, Boston, and Baltimore are organizing special classes for backward and feeble-minded children. Cognizant of the same thing, the Royal Commission on the Care and Control of the Feeble-minded, recently sitting in London, England, expressed the opinion that the provisions of the Defective Children's Act of 1899, by which the school authorities are permitted to compel the parents of feeble-minded children to send them to special certified schools for suitable instruction, should be made compulsory.

The ultimate aim and object in the teaching of the feeble-minded being to fit them, as far as possible, to become useful men and women, it necessarily follows that school teaching should be followed by manual training. Imbecile children, when they have acquired such elementary education as their limited abilities will permit them to assimilate, should be set to learn some useful trade, by the practice of which they may become at least partially self-sustaining. It is in the industrial departments of the large establishments for the training of imbeciles that one sees what the better class of these unfortunates is capable of learning, and what really good workmen many of them become under the supervision of patient and intelligent instructors.

It was the lack of manual training that constituted the great

barrier to further progression in the Ontario institution, to which I have alluded as the only one of the kind in the Dominion. As early as 1872, Mr. J. W. Langmuir, then Inspector of Asylums, urged the creation of an asylum for idiots which should consist of two distinct departments, one a training school for young idiots, the other a custodial department for the safe-keeping of adult idiots who were unsafe to be at large. By the adoption of the second portion of Mr. Langmuir's scheme the Ontario Government established the first custodial asylum for idiots on the continent. Later a teaching department was added, and for several years Dr. Beaton, the superintendent, was enthusiastic in his praise of the good results attained. Ere long, however, he discovered that it would be impossible to secure any permanent benefit if manual training was not made to go hand in hand with mental and physical culture. Time and again he appealed to the Government for the provision of industrial instructors, but all in vain. In addition, his staff of teachers was reduced to such an extent that, in 1902, the training school had to be discontinued. In concluding his report for that year, Dr. Beaton says: "It is to be hoped that they (the schools) will soon be reopened with a capable staff of teachers and instructors, and that the institution and schools will not only be placed on the popular footing of years ago, but far in advance." I am sorry to say that this hope has not yet been realized.

With the reports that many imbeciles, after training, are independently capable of earning their own livelihood, I am not prepared to agree. Without continuous supervision little can be expected from them no matter how highly trained and educated they may be; their whole disposition and temperament, away from control, in the vast majority of instances completely negatives the supposition. A few improvable cases may be rendered capable of earning a modest competence, but a few, and only a very few, are successful. In nine cases out of ten when such patients are said to earn their own living, it will be found that they have some advantages in the line of continued supervision. There can be no doubt, therefore, that it is the duty of the State to provide some means of permanent guardianship for these cases if friendless, and the need could be admirably met by the creation, in all institutions for the feeble-minded, of a separate department for

improvable cases, who, after having undergone their period of training, could be drafted into work-shops of various kinds, or do farm and garden work under the supervision of an inspector. In this way they could be made in a large measure self-supporting,—perhaps even a source of revenue to the State. The model institution outlined by Dr. W. W. Ireland, than whom we have no higher authority, would consist of three separate departments; a custodial department for the extreme and non-educable class; an educational department for those capable of being taught and trained; and a semi-custodial department for those whose education and training has been completed, these three departments to be distinct buildings at a moderate distance apart, but all under the same superintendence.

As respects special accommodation for epileptics, Canada is even worse off than she is in that for the feeble-minded, because, up to this date, no separate provision whatever has been made for them. Like the idiot they have either been kept at home, confined in poorhouses, or scattered through the various wards of insane asylums. Every principle of justice and humanity is opposed to the indiscriminate mingling of epileptics, lunatics, and paupers, and Ontario, to her credit be it said, has already taken steps to right this wrong by founding an epileptic asylum at Woodstock. This it is expected will be ready for occupation during the present year, certainly not before it is urgently required, since, by statistics compiled by Dr. Russell of the Hamilton Asylum in 1893, there were at that date no less than 292 epileptics among 4251 asylum residents, with probably more than double that number scattered through the country, a burden to their friends and a menace to the public.

The peculiarities and requirements of epileptics are such as to characterize them as a distinct class, for whose well-being separate accommodation is necessary. Only under such circumstances can they receive that special care in the way of occupation, diet, and moral treatment that their condition demands; only in that way can we spare our insane patients the annoyance arising from the paroxysms of their disease, their irritability and the violent outbursts of maniacal excitement to which many of them are subject. That the insane epileptic is properly a State charge every person agrees, but the same cannot be said of those who

are sane. Personally, however, I am of the opinion that all epileptics ought to be under proper care and treatment, and to a certain degree under control, and if these requirements cannot be supplied by the friends, then, both for the patient's sake and for that of the community in which he resides, provision should be made for him by the State. The boundary line between sanity and insanity in the case of most epileptics is a very narrow one, and our Provincial Governments would do well to follow the example of the United States, Germany, and other countries where timely care of the epileptic often prevents his passing into the category of the insane.

According to the best modern authorities employment is a *sine qua non* in the treatment of epilepsy. Those in touch with epileptics all maintain that the fits tend to disappear during working hours. Dr. Spratling of Craig Colony is strongly of this opinion and states: "On holidays and on rainy days, when patients were compelled to stay indoors and could not engage in any occupation, the number of seizures was doubled." In this point of view the colony system undoubtedly offers the best mode of care for the victims of the "sacred disease." In colonies a variety of trades can be carried on to advantage, and, if a sufficiency of land be secured, floriculture, fruit-growing, and market-gardening, all of which are among the best forms of occupation for epileptics, both male and female, can be made sources of profit. In this way the colonists are enabled to contribute in some degree towards their own maintenance. Probably the most promising plan to meet all requirements, at least expense, is that advised by the Manchester and Chorlton Joint Asylums Committee whereby one portion of a large estate is set apart for the accommodation of sane epileptics, another portion for those who are imbecile or insane.

The equity and wisdom of separating the criminal insane from those innocent of wrong-doing cannot be disputed. In Canada, however, we have no provision for such segregation, and the asylum authorities are obliged to receive not only all criminal lunatics but all insane criminals on the expiration of their penal sentences. The former evil, bad as it is, is dwarfed by the latter, because patients of this type, as a rule, retain all their criminal instincts and are among the most vicious and depraved of the

human race. The presence of such patients on the wards of an ordinary asylum is a standing menace to the peace and discipline of the whole institution. In their sane moments, they never had the most distant ideas of the rights of property, and seldom placed any value on human life when it stood in the way of the prosecution of their criminal designs; when insane, these traits are intensified, because what little power of self-control they had is generally lost and the fear of further punishment for their misdeeds is banished. The more an ordinary lunatic improves, the more easily he is managed, whereas the more rational an insane criminal becomes the more dangerous he is. If taunted by their fellow-patients, as is apt to be the case, such lunatics are prone to violence; in addition they are constantly making efforts to escape and safeguards have to be provided against their accomplishing their purpose. In this way the innocent are made to suffer for the guilty, because we cannot fully carry out the modern idea which discourages the use of bars and locks, in fact everything that partakes of the nature of a prison. Many of the insane retain all their self-respect and object to associate with this class of patients, while their friends, quite rightly, feel it a grievous wrong to have their unfortunate relatives housed with men and women who have been deliberately guilty of crime, and who, while undergoing punishment for such crime, have been overtaken by insanity. Rockwood Hospital suffers most from this cause owing to its contiguity to the penitentiary, and its superintendent, Dr. C. K. Clarke, who has long and strenuously protested against it, forcibly concludes his report for 1903 in these words: "People outside of institutions do not care to associate with instinctive criminals—there is no reason why the non-vicious insane should be forced to accept a companionship that would be repulsive in everyday life."

The following motion presented by Dr. Pliny Earle and adopted by this association in 1873 applies forcibly to Canada at the present day:

"*Resolved:* That when the number of this class in any State (or in any two or more adjoining States that will unite in this project) is sufficient to justify such a course, these cases should be placed in a hospital specially provided for the insane; and that until this can be done, they should be treated in a hospital connected with some prison, and not in the wards or in separate buildings upon any part of the grounds of an ordinary hospital for the insane."

The former is undeniably the better plan, and, if Ontario be taken as an index to the existing state of affairs in the Dominion, there is certainly a large enough proportion of the criminal classes of the insane to warrant the creation of a special asylum for them. In 1899 there were in the asylums of that Province no less than 77 criminal lunatics guilty of offenses but acquitted by the courts on the ground of insanity; the number of lunatic criminals would probably at least equal this; and there must be a large number of like cases in the other provinces. For the Federal Government to erect an institution for the reception of these cases, taxing the various Provinces in proportion to the patients they send, would seem to me the best and most economical way to meet the requirements. Failing this, all such patients should be kept in the penitentiary asylums, which should be open not only to insane criminals whether their sentences have expired or not, but to the criminal insane as well. Criminality alone should be the criterion for the separation of these people from the ordinary insane.[2]

For some years a conviction has been steadily growing in the minds of physicians and the general public that Canada is behindhand in the lack of any provision for the care and control of inebriates belonging to the lower ranks of society. In 1875 the Province of Ontario took steps toward providing for these unfortunates, but the good intention was abandoned. To my mind there is no doubt that the custodial care and treatment of inebriates is a question of the gravest importance, and that the establishment and maintenance of a hospital for this purpose fall within

[2] The following paragraph, published in one of the daily newspapers in January last, furnishes a striking example of the need of special provision for insane criminals: "Samuel Jarvis, who shot a Windsor policeman last week, escaped last summer from the Rockwood Asylum, where he had been placed after his release from the Penitentiary, on the completion of a third term. The greater part of the past 17 years has been spent by him behind prison walls. Until recently Jarvis was in the penitentiary insane ward. When the time of such prisoners has expired the law requires that they be placed in an asylum. This was done in the case of Jarvis, who was transferred from the penal institution on one hill of Portsmouth to the institution for the insane on the other. He had not been there more than a month before he decided to escape, and this he succeeded in doing. All attempts to locate him were futile."

the true sphere of the Government. The great barrier to the creation of such an institution has been the threadbare cry, the "liberty of the subject," but the rights of the individual should be subordinate to the rights of society. We are told that the inebriate by his drunkenness violates no law, and this may be so. But, are we, therefore, justified in allowing him to continue his debauchery until he commits a crime, as so many of them do, while many more are only by the merest accident kept from so doing? If a lunatic threatens suicide or the life of a fellow-citizen, we put the law in force and confine him, without, as a rule, waiting until he has made an attempt on his own life or committed a homicide. It should be the same with an inebriate.

The distinction between drunkenness and insanity has frequently been the subject of forensic investigation, but it is daily becoming more and more evident to the profession and to some extent to the laity, that inebriety and dipsomania are diseases of the brain, resembling, if not in some cases constituting, true insanity. That an individual should in all other matters appear to be of sound mind, but that at certain times he should be subject to a morbid desire to reduce himself below the level of the beast by means of drink, is hard to grasp, but none the less true. Equally true is it, as shown by recent German studies, that the continuous use of alcohol to excess produces certain molecular changes in the brain cortex, which are apt to be permanent. The result is a lowering of the moral tone, a dulling of the mental powers, and a weakening of the will which constitute an organized, progressive degeneration. Nor is the ill effect of the excessive use of alcohol confined to the individual himself. There is strong evidence to show that the children of intemperate parents inherit a marked tendency to intemperance, insanity, idiocy, epilepsy, or some other form of mental disorder. Such eminent authorities as Professor Kraepelin of Heidelburg and Professor Berkley of Johns Hopkins University agree in considering alcohol as a powerful factor in the production of insanity, the latter going so far as to say, in his work on mental diseases, "Of all the varied inciting causes of mental infirmities, heredity and alcohol are most important." Personally I would go still further and say that, in the majority of cases at least, inebriety itself is a mental disease,—a true psychological condition. If, as has been

done, we define an insane person to be, " One who owing to perverted or deficient mental powers, the result of functional or organic disease of the brain, cannot adapt himself to his natural environment, and whose conduct is not in a sufficient degree guided and restrained by the ordinary safeguards of society," we include a large section of those at present known as habitual drunkards. But whether prepared to go thus far or not, I think there are few who will not agree that alcohol does much more harm in the way of producing mental degradation in the many who are never placed under care, than in the few who now find their way into asylums. Everyone is acquainted with men and women whose mental powers are so shattered by long-continued indulgence in drink that they have reached the borderland between sanity and insanity, even if they have not overstepped it.

To try to reform this class by any other means than personal restraint is " wasting our sweetness on the desert air." They must be placed in custody in an institution, the superintendent of which is clothed with authority to detain his patients for an indefinite length of time. In other words, the same policy in respect to their personal liberty should prevail, as now prevails in respect of lunatics. It matters not what the form of commitment be, provided it is statutory and means a definite and prolonged term of oversight and treatment. This treatment should be conducted in a special establishment where work of various kinds,—one of the best of remedies,—can be enforced after the necessary medical regimen has paved the way for it. In this manner the cost of maintenance would be greatly lessened.

As early as 1833, Dr. Woodward, soon after taking charge of the Worcester Insane Asylum in Massachusetts, urged that inebriates be regarded as insane and sent to the asylum for special treatment, but this is manifestly wrong. To associate the ordinary lunatic with the inebriate, even if we consider the latter to be truly insane, is an injustice to both. In the words of Dr. Joseph Workman: " Inebriates are soon dissatisfied, and strongly disposed to magnify the causes of dissatisfaction which the discipline of an insane hospital unavoidably presents,—this dissatisfaction becomes contagious. One inebriate can upset the quiet and comfort of a whole ward."

In view of the declaration of modern science that tuberculosis

is a communicable, preventable, and curable disease, the non-provision of proper means for separating the phthisical from the non-phthisical insane might almost be called criminal, and yet in only one of our Canadian institutions, Rockwood, is there any special arrangement for such segregation. In all the other hospitals the medical officers have to combat the plague as best they can by attention to cleanliness, disinfection, and the isolation of the affected as far as possible. So much, however, has been written on the subject of tuberculosis during the past few years that I shall not detain you with any detailed account of my own views on any of the points connected therewith, but content myself by saying that I doubt whether, owing to the rigor of our climate, the "tent treatment," so successfully practiced by Dr. A. E. Macdonald at the Manhattan State Hospital East, would be practicable with us during the winter months. Instead, I would favor the erection of a separate, isolated building to be used for tubercular cases only, one portion of the structure being set apart for suspected cases, another for those in whom the presence of the malady in an active state has been positively established. Such a building should be frame and constructed as inexpensively as possible, so that, if its destruction on account of infection seemed advisable, the loss would be slight.

An important problem confronts the superintendents of Canadian hospitals, as it does those of the United States, in the case of the discharge of friendless patients. This is the securing of homes and employment for them. Who of us but can call to mind cases where the discharge of patients, though fully warranted by their mental condition, has been delayed for weeks, even for months, because they had no friends who could or would take charge of them on their return to the world, no homes to go to, no employment awaiting them by which they could earn their bread? The average citizen seems to have a morbid dread of the poor unfortunate who has been insane, and utterly refuses to even think of hiring him, while his wife is equally resolute against engaging as a domestic any woman who has been an asylum inmate. To turn such persons adrift without means or help is virtually offering a premium for their return to the hospital, whereas, if given some slight assistance they might earn a fair living and not again become a charge on the public.

"'Tis not enough to help the fallen up,
But to support him after."

Criminals discharged from prisons and reformatories are helped and encouraged by Prisoners' Aid Societies, often indeed assisted by the State with gifts of clothing and money. Fallen women are taken in hand by societies with a view to their reformation. Orphans are housed, educated, and clothed by the charitable. Only for the poor creatures who have emerged from the gloom of dethroned reason is there no helping hand, no assistance of any kind. The best remedy for this pitiful state of affairs is to be found in the organization of "After-Care Associations for the Insane," such as exist in France, which country was the pioneer in this branch of philanthropy, Switzerland, Italy, Germany, and Great Britain. Such associations would have to be the outcome of private enterprise, because the Governments of the several Provinces have already as much as they can do to provide for those actually insane. Doubtless, however, if once started by private benevolence and brought to a successful issue State aid would not be wanting to help the good work along.

Last, but certainly not least, of the wants to which I would call attention is the abolition of political patronage in the matter of hospital appointments and the administration of hospital affairs. The "spoils doctrine" which decrees that "office is a reward for political service" has done much to keep down the record of scientific work done in Canadian hospitals for the insane. Merit has had little weight, especially in Ontario, as against "political pull," and the consequence is that almost two-thirds of our existing asylums are directed by superintendents destitute of special training prior to their appointment. That men taken from the ranks of the general profession do sometimes prove themselves admirable asylum officials, I do not dispute. But what I do maintain is that the principle is wrong. To subject the care of the insane to political purposes is a flagrant injustice to the patients, who should be afforded the best possible chance for recovery; to the taxpayer, who should receive the best value for the money he pays for their support; and to deserving juniors who are thereby debarred from all chance of promotion. Superintendents are made, not born, and it requires years of conscientious study to acquire a knowledge of how to deal satis-

factorily with the manifold problems of psychiatry. Moreover, assistants generally take their cue from the superintendent, and if the superintendent be not specially trained for his work and take no active interest in it, his subordinates will almost inevitably lapse into routine. Nor can we blame them much that such should be the case. With no example set them, no prospect of advancement to cheer and encourage them to put forth their best efforts, what else could we expect?

Were the "spoils system" confined to the appointment of the heads of asylums the resulting ills would be lessened. Unfortunately it is not. Every medical office connected with our asylums, from the highest to the lowest, is regarded as "political pap" to be administered where it will do most good for the dominant party. Governments are unable or unwilling to grasp the fact that the scientific study of psychiatry consists primarily in the study of mental phenomena, and that this can only be done to advantage by men specially trained for such study. As a result, well-developed seniors, who have been failures in life, are often given the junior places that should be awarded only to young men who have shown interest in, and capacity for original research. This is manifestly unfair both to the inmates of our asylums and the superintendents thereof. "Responsibility and authority must go hand in hand" is a time-honored axiom, but the system of Governmental appointment of assistants furnishes the anomaly of superintendents, held responsible for the successful management of their hospitals, and yet deprived of the authority to appoint the officers upon whom such success in great measure depends. Surely a superintendent should be best capable of judging of the fitness and competency of his assistants, and it comports with common sense that he will, if only through self-interest, endeavor to procure the best he can find.

A vigorous editorial, "Insanity and Politics," recently published in the *Montreal Medical Journal,* deals so searchingly with the ills of political patronage in our asylum service that I may be pardoned if I quote a portion of it:

"Most persons will admit, unless they are incapacitated by congenital perversion, or political prejudice, that a hospital for the insane exists—pun or no pun—for the purpose of extending hospitality to the insane, and not to the protegees of a political party. In short, it is mental not political

degeneracy which entitles an entrance to the enjoyment of such hospitality as it can offer. In Canada, there are to-day eighteen hospitals for the insane, and all but six exist for the combined care of the insane and the politicians. In twelve the present superintendents owe their appointment to influences other than their attainments in psychiatry.

"The answer which the politicians make to all protests is that the men who occupy the posts of assistants are not sufficiently qualified to become superintendents. This is partly true, and because it is partly true the case is the worse; because, if there are incompetent men among the assistants, it was the politicians who put them there. But the answer is inadequate, because, in spite of the politicians, there are enough good men in the service to fill every vacancy which may occur during this generation. The wonder is that there are any remaining, when they have seen themselves passed over time and again by men whose attainments were unproven. The rewards of the specialty of psychiatry are small enough, and should not be filched away. The injustice is not chiefly to the men who have spent a lifetime in acquiring a knowledge of the insane, of their diseases and of their treatment; it is to the wretched insane themselves, who are deprived of that experience which might aid in their recovery.

"We yield to none in our admiration of the general practitioner. We are aware of his energy, his resource and his fidelity, but not even the general practitioner will lay claim to a capacity for treating off-hand and to the best advantage grave lesions of the eye and ear, or of the more secret parts of the body. He should adopt the same attitude toward the brain. In time it will come to be a shameful thing for a general practitioner to accept a position for which he is not qualified, since thereby he is committing a wrong towards his colleagues and towards his patients.

"The ideal service is that which prevails in New York. The superintendent is appointed by the board of management, and he must be selected from men who have served at least five years in an institution for the insane and have proven their capacity and instinct for such work. The assistants in turn are appointed by the superintendents and they obtain advancement according to their merits, no step in advance being made unless the candidate has had previous experience in the specialty, and proven his fitness by passing an examination before promotion."

Nor is it solely in the way of appointments and promotion that our Provincial Governments have shown themselves remiss. The good men in the asylum service, and good men there be, are, in most instances, hampered by the want of proper equipment and the paucity of the medical staff employed. It is the duty of the State to aid in every way the attempts of its physicians to do scientific work. Only so can they be stimulated to keep pace with the trend of modern research in other countries,—only so can we guarantee that our patients will be under the care of ever-

widening experience. Hitherto the Governmental policy has been to provide little or no equipment for study, and so to limit the number of physicians that the greater part of their time is taken up with clerical duties. The numbing effect of such routine work is great, and might well make the average assistant adopt the words of Mr. Mantalini and pronounce life "one demd horrid grind."

Before we can properly enter on the study of psychiatry, as we ought to do, our Governments must learn that to make a hospital a center of scientific research its physicians should be appointed from the best class of men; should be paid sufficiently well to free them from anxiety as to their future livelihood; should be certain of promotion if they prove themselves fitted therefor; should be assured of a retiring allowance, graduated on length of service as is the case in England and other trans-atlantic countries; should be freed from an overburden of routine work; and should be provided with books, apparatus, and assistance to properly pursue their researches.

Much more might be said on this and other subjects relating to the care of the insane in Canada, for example, the necessity of separate hospitals for acute cases and of pavilions connected with general hospitals, of nurses' homes, and of retiring allowances for medical and other officers, but I fear you will already have applied to me the old Spanish saying anent a tedious writer: "He leaves no ink in his inkpot." I shall, therefore, no longer trespass on your forbearance, but content myself by saying in conclusion, that while with respect to custodial care and ordinary treatment, moral and medical, Canada, generally speaking, is well up to the times, she is doing little toward the solution of the many problems connected with the scientific aspects of insanity. In this respect she presents but a sorry picture when compared with the good work being done in many hospitals elsewhere. To stand still is to fall behind. The universal motto should be:

> "Press on—'for in the grave there is no work
> And no device.'—Press on while yet ye may."

A STUDY OF MENTAL DISEASES ASSOCIATED WITH CEREBRAL ARTERIO-SCLEROSIS.[1]

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At the present time there are three forms of mental disease which seem to be associated with characteristic changes in the central nervous system; these are general paralysis, arterio-sclerotic dementia and less certainly senile dementia. The better understanding of the pathological anatomy of general paralysis and the importance which plasma cell infiltration of the vessel wall is known to play, has cleared the way for the separation of the arterio-sclerotic brain diseases. In the same way the recognition of a senile brain atrophy without arterio-sclerosis shows an independence of two processes, often associated in the brain in the senile period.

Difficulty in the interpretation of the importance of the arterio-sclerotic process occurs from the fact that arterio-sclerosis of the cerebral vessels is not uncommon in various forms of mental disease, especially of the later years of life, and that undoubtedly arterio-sclerosis of the cerebral vessels may be present without recognizable mental disease. There are however certain forms of mental disturbance which clinically show such a prominence of symptoms referable to focal or diffuse vascular brain disease, and which anatomically are associated with destructive lesions of the brain due to diseased vessels that they may be grouped among the psychoses due to organic brain disease as a special group of arterio-sclerotic dementia.

The dementia associated with coarse vascular lesions such as hæmorrhage and softening has long been a familiar type and these cases have been described in the text-books as post-paralytic dementia, post-apoplectic dementia and as arterio-sclerotic

[1] Read before the Boston Society of Psychiatry and Neurology.

dementia. After separating out from this type of cases those in which the disease is of embolic origin and no arterio-sclerotic brain disease demonstrable, it will be found that most cases of coarse lesion at the same time are associated with arterio-sclerosis of the finer vessels and with greater or less destruction of the cortical nervous elements. This supports the view that the mental disturbance of these cases may be due more to the finer changes in the cortex than to the coarser deeper-lying lesions. In addition to these cases there have been more recently described other varieties of arterio-sclerotic brain disease. Alzheimer[1] in 1902, described four groups of cases in which the mental process is associated with arterio-sclerotic brain disease. All of these groups are, however, but varieties of one arterio-sclerotic process.

I. Arterio-sclerotic brain atrophy which clinically may course in two ways; there may be what he calls minor nervous symptoms in which the process lacks the progressive character of the other type. The symptoms are less severe, there is a pronounced increase of mental fatigue and there occurs memory weakness, headache, and dizzy attacks. Anatomically there is present a severe sclerosis of the arteries with very slight gross changes in the brain. Microscopically there is an absence of marked focal disintegration of nervous tissue, little more than pigment atrophy of the ganglion cells, with scattered proliferative phenomena in the glia cells of the cortex and an increase of glia fibers about the vessels.

The second type is that of a severe progressive arterio-sclerotic brain degeneration, which in its beginning may resemble the first form, but there develops rapidly severe psychical phenomena, with gradually progressive deep dementia, incidentally there are "attacks" of different nature such as fainting, apoplectiform shocks, or epileptiform convulsions, with more or less well-defined focal symptoms.

II. Subcortical encephalitis; this is a group described by Binzwanger,[2] in which there is an atrophy of the deep-lying white substance due to arterio-sclerosis of the long medullary arteries.

[1] Alzheimer: Die Seelenstörungen auf arteriosclerotischer Grundlage. Allg. Zeitschr. f. Psych., Vol. 59, p. 695.

[2] Binzwanger: Die Begrenzung der allgemeinen Paralyse. Allg. Zeitschr. f. Psych., Vol. 51, p. 804.

Clinically, difficulty in the association processes is the first and most striking symptom; speech is early affected. Often there are varieties of aphasic disturbances, apoplectiform and epileptiform attacks with periods of excitement and confusion. There sometimes develops, suddenly or gradually without psychical involvement, articulatory speech disturbance or hemiparesis. Anatomically there is an absence of the focal softenings expected. The pia is moderately hazy, the convolutions are a little narrowed and deeply depressed. The cortex is well preserved, but the hemisphere white substance is greatly atrophied. Often in these cases there are arterio-sclerotic foci in the internal capsule, lenticular nucleus, thalamus, and quite regularly in the pyramid tract of the pons.

III. Perivascular gliosis is a process in which there is an atrophy of the nervous elements and a proliferation of glia in the field of distribution of vessels which by reason of arterio-sclerotic disease furnish less nutrition. The nervous elements easily reacting to such disturbance gradually atrophy and give place for a glia overgrowth.

IV. Senile cortical devastation, is an arterio-sclerotic disease occurring in senile years and associated with senile brain atrophy. In this process there occurs an arterio-sclerotic degeneration of the smaller vessels of the cortex with disintegration of the nervous elements in peculiar wedge-shaped foci or in streaks.

Pure types of these groups of Alzheimer's are not common, as often the focal lesions, where of any considerable size or important location, modify the clinical and anatomical picture.

Anatomically arterio-sclerotic brain disease must be considered as two processes, viz., that present in the vessels and the reactions in the nervous tissue. As it affects the vessels at the base of the brain, in the meninges and the largest vessels of the brain substance, the process presents the same features as in other arteries of the same size. The intima is chiefly involved; its cells proliferate, increasing the thickness of the coat, usually unsymmetrically. The elastica increases and new-formed fibers pass in among proliferated intimal cells, later necrotic degenerative processes occur in the new tissue, the so-called atheromatous degeneration; often calcareous salts are deposited in the degenerated area. The wall instead of becoming atheromatous may more rarely undergo hya-

line transformation. In the finer vessels, such as occur in the cortex and white substance of the convolutions, there occurs proliferation of the endothelial layer and increase or splitting up of the elastic fibers. Later the endothelium may lose its staining qualities. The elastica or intima may degenerate into a hyaline or colloid substance. As a result of these changes there occur peculiar arrangements of the vessels. Often there are clusters of rings due to vessels cut in cross-section, or long chains of rings, possibly produced by tortuosities in the vessel wall. Various other kinds of irregularities in the vessel wall may occur. As a result of the proliferation of the intima and elastica the original lumen may be obstructed and new channels formed through the vessel. In one instance four channels ran through the intimal proliferation. The adventitia commonly contains phagocytes with pigment; true infiltration of the vessel wall does not occur. As hyaline change there occurs a transformation of the arterio-sclerotic wall into a hyaline-like substance. More rarely the vessel may degenerate into a substance giving a reaction different from hyaline and which Alzheimer[4] has described as colloid degeneration.

As a result of these changes there may occur focal softenings, where the shutting off of nutrition is sudden, or if gradual, the softening is incomplete and there occurs a degeneration of the least resistive elements and proliferative changes of the glia in the involved region. This may be of large extent where arteries of wide distribution are affected, or small where the fine cortical vessels are changed. As another result of arterio-sclerosis, especially of the hyaline degeneration of vessels there may occur, as described by Weber,[5] fine miliary hæmorrhages. Further, the degenerative changes may lead to weakening of the walls and the formation of miliary aneurisms, the rupture of these giving origin to the larger brain hæmorrhages.

The changes in the nervous tissue cannot be regarded as specific, yet they are quite characteristic in their peculiar distribution. As a result of the disturbance of nutrition there occur necrotic

[4] Alzheimer: Die Kolloidentartung des Gehirns. Arch. f. Psychiatrie, Vol. 30.

[5] Weber: Hyaline Gefässentartung als Ursache miliarer Gehirnblutung. Arch. f. Psychiatrie, Vol. 35, p. 159.

changes in the nerve cells which are of a variety of types; ultimately the diseased cells may disappear or persist as severely altered forms.

The glia elements as a rule show focal proliferative phenomena such as swelling and production of fibers; occasionally glia nuclei mitoses are observed. When the injury is very severe or recent the glia elements may show only regressive changes. Other forms of cellular elements occur with greater or less frequency. Chief of these is the epithelioid cell, which is rarely absent from the arterio-sclerotic foci, another is the long rod-shaped " Stäbchenzelle " whose origin is less certain.

The characteristic feature of the arterio-sclerotic process in the cortex is its focal occurrence. These focal lesions may vary from small fields visible only under the immersion to larger patches of devastation seen with the unaided eye. Histologically arterio-sclerotic brain disease is to be chiefly differentiated from that of general paralysis. This is to be made from the less diffuse character of the process and above all by the absence of lymphoid and plasma cell infiltration of the vessel wall. From the senile brain atrophy it is differentiated by its focal character and the relation of the nervous tissue degenerations to vessel changes; the appearance of the cortex being that of a patch-like degeneration, while in senile dementia the disappearance of the nerve cells is more diffuse and general. In both general paralysis and senile brain atrophy arterio-sclerosis with its secondary degenerations may also be present, yet is purely associative.

Out of a number of cases of arterio-sclerotic brain atrophy we have collected the following: The first four cases correspond to Alzheimer's first group. The fifth case is that of an arterio-sclerosis in which the coarse lesions are especially marked.

For the clinical records of all of the cases described I am indebted to my associates on the medical staff of the Danvers Hospital.

CASE R.: Arterio-sclerotic brain atrophy with minor focal symptoms.—At 62 becoming irritable and developing mild delusional ideas; marked forgetfulness; gradual improvement; stationary course for three years, then return of ideas of suspicion; rapidly progressing deterioration; profound memory disturbance; defect-

ive orientation; considerable dementia; death occurring in coma after a series of convulsions.

Anatomical findings: general arterio-sclerosis; severe sclerosis of finer cortical vessels; slight degenerative changes in nerve cells and marked progressive glia phenomena.

R.—Male, carpenter. Hereditary history of mother dying of paralysis, a half brother and half sister insane. No alcoholic history. At 41 suffered from what was called "congestion of the brain." Some years before he was 62 he became irritable and developed the idea that things were done to purposely annoy him. He slept poorly and often complained of headache, at times he was forgetful; on one or two occasions he assaulted persons whom he believed were annoying him. At 62 he was admitted to the Danvers Hospital. There was nothing noteworthy described in the physical examination made. Mentally he was clear and talked freely of the annoyances he had been subjected to, otherwise his attitude was normal. He soon ceased to be annoyed by things about him and three months after his admission he was taken home. There he resumed his former occupation and continued well for nearly three years and a half; he then became seclusive and would sit around for hours without speaking; his mood was irritable, his old ideas of suspicion returned and he made threatening assaults against those he regarded as irritating him. He lost weight and as before he complained of headache. He slept little and at night restlessly wandered about. At 66 he was again admitted to Danvers. The examination showed the superficial arteries to be hard and tortuous, there was a systolic murmur heard over the aortic area and the kidneys showed signs of chronic nephritis. Save for considerable tremor of the tongue there were no neurological disturbances noted. Mentally he understood questions, knew that he was in Danvers but could not give the day of the week and placed the year as 1872. He had great difficulty in recalling answers to simple questions, making mistakes, many of which he recognized; he remembered having been at the Danvers Hospital before but gave the time as seven years ago. He was unable to recall the names of the physicians who cared for him at that time. He spoke of the same ideas of annoyances and suspicions that he held before but denied that he had ever thought of them until recently; "his daughter had choked him severely";

"they are trying to make him out crazy." He had no insight into his disease, spoke of the foolishness of his being in a hospital and regarded himself as being perfectly able to go out and work. He had little knowledge of current events; made many mistakes in simple calculation tests and on the whole was considerably demented. He improved physically during the next few months but still held to the ideas of suspicion; his memory was profoundly weakened, he became apathetic, losing all interest in what was going on about him, took no care of his personal appearance and rapidly deteriorated. He then began to fail physically, having frequent attacks of vomiting and diarrhœa. The urine contained much albumen and numerous casts. The pulse was rapid and of high tension. In December, 1902, he was described as "bewildered and disoriented." A few days after this he had a series of convulsions with twitchings of the left side of the face and four days later he died in coma.

Anatomical findings.—Chronic interstitial nephritis; cardiac hypertrophy; broncho-pneumonia; general arterio-sclerosis.

The brain showed little unusual in gross appearance. The weight was not diminished. There was a high degree of atheromatous degeneration of the basal vessels. The pia showed a chronic leptomeningitis. Gross focal lesions were absent.

Microscopically there was a severe arterio-sclerosis of the cortical vessels; in both nerve cell layers and white substance. This was noticed in the proliferation of the intimal endothelium and increased thickness of the elastica. By this proliferation the vessel lumen was narrowed. In one artery four newly-formed channels were formed in the proliferation. In places there were groups of rings representing the cross-sections of vessels; in one instance there was a cluster of ten rings. The adventitia was quite generally thickened and scattered through it were many phagocytes. In a number of places vessels were present whose walls gave the reaction of hyaline. About the sclerotic vessels, quite generally, there were hypertrophied glia cells. Nerve cell changes were not general, occasionally near a diseased vessel the nerve cells were shrunken and atrophied but this was not marked. Apart from the regions of sclerotic vessels the glia was of a regressive type. About the vessels in the white substance there were groups of

hypertrophied glia cells and peculiar long cells apparently loosened from the vessel adventitia.

CASE A.: Severe progressive arterio-sclerotic brain atrophy.—At 34 gradual change of character, becoming dull, forgetful, and irritable. Shock followed by persistent speech-defect, prominent focal symptoms and increase of memory weakness; remission for eight months, then episodes of confusion, progressive deterioration, death after a series of convulsions.

Anatomical findings: General arterio-sclerosis; chronic interstitial nephritis; cardiac hypertrophy; broncho-pneumonia. Severe sclerosis of large and small cerebral vessels, multiple cysts of white substance of hemisphere, focal disintegration of cortical nervous elements and proliferative glia phenomena.

A.—Male, woolsorter. Hereditary history of father and two uncles insane, the father dying of Bright's disease. Personally he was somewhat below the average in mental qualities. Alcohol was used very moderately. Syphilis denied. During early life he worked as a painter and at one time had lead colic. At 34 there was a mental change, he became duller than formerly and slept a good deal during the day. Emotionally he was easily irritated and cried often without cause. His physical health deteriorated, his gait became unsteady, but mental symptoms were not especially marked until several months later when he had a shock, with unconsciousness until the day following, an articulatory speech-defect persisting after the other physical symptoms disappeared. He now became more irritable and at times had episodes of bewilderment. He developed delusions such as that "some one was going to jump through the wall at him." Apparently he had auditory hallucinations. At 35 he was admitted to Danvers. Physically he was poorly nourished. The heart had a systolic murmur. There was no mention of sclerosis of superficial arteries. Pupils equal and reacted lively to light stimuli. Knee-jerks equally exaggerated. Clonus in right ankle. Romberg's symptom was present. His gait was ataxic and walking very difficult. Speech was described as paralytic and difficult to understand. Mentally he comprehended questions poorly, and his answers were irrelevant and disconnected. He was partially oriented, knew he was in Danvers Hospital and had an approximate idea of the date. His attempts to write were illegible. Often he

cried without cause. His whole attitude was one of confusion. He was inclined toward coarse restlessness, such as squirming about the bed and picking aimlessly at the clothes. In one later note it was recorded that he was aphasic, i. e., " would speak out a jumble of unintelligible sounds." At the end of three months he had improved considerably, his speech was quite distinct, orientation perfect, but his movements had considerable ataxia. He was then taken away and later went back to his work of wool-sorting. For eight months he worked fairly well excepting for one short period. He then became restless, irritable, and his work was unsatisfactory. Two months later he had periods of " confusion " and at one time took all of the articles off from his table and put them in a strange place. A few days later he drank laudanum with suicidal purpose, then he went to a physician in a half-dressed condition and told him about it. He soon returned to Danvers. He then was oriented, recognized his former associates, but his comprehension of questions was poor and his answers irrelevant. The day following he had a series of clonic convulsions lasting fifty minutes. A day later he died in coma.

Anatomical findings.—The brain weight was 1220 grms., a little below the average. All of the basal arteries and the meningeal vessels were very sclerotic. The pia showed chronic leptomeningitis. There were no marked gross atrophies. Both lenticular nuclei were porous. In the pons there were three small cysts among the pyramid fibers, one of these was apparently of recent origin.

Microscopically the cortical vessels showed severe sclerotic changes. These were more marked in the left than in the right hemispheres and more in the calcarine than in other regions. The change was chiefly a thickening of the intima and elastica, the latter in some instances was split into several lamellæ and lay in wrinkled folds. The adventitia was thickened and packed with phagocytes containing pigment. In many vessels the intimal cells had lost their staining qualities; the walls having degenerated into homogeneous rings. The vessels of the white substance were especially sclerotic. In the nerve cell layers were patches where nerve cells were few in number. In these barren areas were apparently dead forms, appearing as shadows of shrunken pyramids; all internal structure had disappeared, a mass of bright yellow

pigment and shrunken irregular homogeneous body representing the nucleus. The fiber process of some of these cells could be traced quite a distance away from the cell body. These shadowy cells lay in groups or streaks or were scattered singly among nerve cells apparently little changed. Satellite cells crowded rather numerously about the pyramids of the deeper layers. In these barren areas and irregularly scattered through the cortex were glia cells in various progressive stages and long "Stäbchenzellen." These latter sometimes lay in clusters. A number of glia nuclei mitoses were seen. In the white substance of the convolution there was no orderly arrangement of nuclei and about the vessels there was a great increase of coarse glia fibers. Big swollen glia cells abounded all through the white substance, and about the sclerotic vessels myelin bodies were numerous. The same arterio-sclerotic vessel changes were present in the medulla and basal ganglia.

CASE L.: Severe progressive arterio-sclerotic brain atrophy.—Gradual onset at 38 with forgetfulness; slow general mental deterioration; convulsions, rapid increase of physical and mental symptoms, focal neurological symptoms; speech-defect; disorientation; irritable mood; progressive and final deep dementia.

L.—Female, hereditary history of father being of alcoholic habits and dying from a stroke of paralysis. Of his ten children three were alive; one died of paralysis at 18, another of kidney disease at 36. Personally, she was mentally backward at school. Her husband gave a history of syphilis. She had twelve miscarriages and no living children. Alcohol was never used. At 38 she became forgetful and unable to do her work well. At 40 she had a series of convulsions lasting some days, since then she had failed physically and mentally, she gradually became unable to walk and at 42 she was quite helpless. Another series of convulsions occurred followed by hallucinatory delirium lasting a few days, after which she was admitted to Danvers. Physically she was anæmic and poorly nourished. Heart enlarged to the left, mitral systolic murmur and accentuated second aortic sound. Superficial arteries thickened. Pulse of high tension. She was unable to stand or walk. General muscular weakness, more marked in left side, facial movements better on right than left side, mouth drawn to the left. No tremors. Arm movements ataxic. Vision

impaired, questionable left hemianopsia. Patella, elbow, and wrist reflexes exaggerated. Superficial reflexes normal. Pupils equal, regular, and react to light stimuli. She complained of pains in arms and legs. General dulled appreciation and poor localization of pain, touch and temperature stimuli. Mentally she was dull and stupid, not volunteering conversation. Speech was slurring and test phrases poorly pronounced, it was noted that it was different from the general paralytic speech-defect. She was completely disoriented and had no comprehension of her environment; understood questions poorly, and showed profound intellectual deterioration. Totally unable to retain new impressions or give any account of her life. She had partial insight, only to the degree that she knew that she was not well. Her attitude was one of profound dementia, the mood was slightly variable but on the whole she was apathetic. There was no attempt to care for her personal habits. The further course was one of continuous and rapid physical failure. Generally she was stuporous. Death occurred in coma during an attack of broncho-pneumonia.

Anatomical findings.—General arterio-sclerosis; cardiac hypertrophy; broncho-pneumonia; chronic nephritis. The brain weighed 1020 grms. The pia was moderately thickened. The basal arteries and the meningeal vessels were severely sclerotic. The convolutions showed no gross atrophies. Numerous small cysts, none over 3 mm. in diameter, were irregularly scattered through the white substance of the hemisphere. A larger cyst about 1 cm. in diameter lay across the tip of the right internal capsule. The basal ganglia were quite porous. Microscopically the vessels of the cortex were severely diseased. Many thickened vessels were torn out in cutting, giving the sections a perforated appearance. The nuclei of the vessel walls stained poorly or not at all; in Nissl preparations cross-sections of vessels appeared as glassy rings. Heavily pigmented phagocytes filled the adventitial spaces. Nowhere were there lymphocyte infiltrations. The vessels of the white substance were especially thickened. In the cortex there were scattered barren areas in which nerve cells were entirely absent or present only in few numbers. There were as many as six in a single section; these lay deep in the nerve cell layers or extended downward from the surface as wedge-shaped streaks, and closely resembled the foci of cortical devastation

found in senile arterio-sclerosis. In all of these areas the vessels were severely altered. In these foci in numbers, and elsewhere scattered singly, were nerve cells in process of disintegration; there were a variety of types of alteration, some had incrustations on the Golgi net or axon and all were indications of a very severe disease process. In and about these focal areas the glia cells showed various proliferative phenomena and where the areas were older these were filled with coarse glia fibers. There were a few scattered areas of anæmic necroses in which the reactions were those of acute softenings. At various places there were small pin-head sized hæmorrhages about severely diseased vessels; in these areas there were numerous phagocytes loaded with pigment and swollen proliferating cells of the vessel walls.

In the cord there were degenerations in the anterior and the lateral column. The right direct and both cross pyramidal tracts were degenerated. The degeneration in the anterior columns disappeared above the lumbar region while the lateral tract was degenerated as low as the second sacral level. The arteries of the cord were generally sclerotic.

CASE C.: Severe progressive arterio-sclerotic brain atrophy with tabes-like complications.—Onset with shock at 48 followed by persistent focal neurological symptoms and becoming forgetful; the further course marked by hallucinatory episodes, and a progressive physical and mental deterioration. Physically there was incoordination, loss of tendon reflexes and sensory disturbances; death occurred from myocarditis.

Anatomical findings: General arterio-sclerosis; severe sclerosis of larger and smaller cerebral vessels; cysts of white substance of hemispheres; slight focal disintegration of the cortical nervous elements and proliferative glia phenomena; degenerations of pyramidal tracts and posterior columns of cord.

C.—Female. Hereditary history of father dying of heart disease at 67. Maternal grandfather insane. Mother insane at age of 50. She had several shocks, was paralyzed and was demented at the time of her death at 72. A sister was insane in girlhood but later recovered. Alcohol and venereal disease denied. At 44 she was struck on the head and was unconscious for an hour. No later sequelæ. At 48 she had an apoplectiform attack, followed by unconsciousness for two hours, and by left hemiplegia, right

ptosis and thick speech. After two weeks she was able to walk, but showed a mental change. She was forgetful and often fabulated. She later developed auditory hallucinations, such as "hearing music"; eight months before admission became helpless and unable to walk; deterioration was now rapid; she could not remember from day to day, had no care for her bowel and bladder movements, took little interest in her environment, and soon was admitted to Danvers.

Physically she was poorly nourished with flabby musculature especially on the left side. The left angle of the mouth drooped and the left naso-labial fold was smoothed out. The superficial arteries were thickened, the heart outlines were a little enlarged towards the left. She was unable to stand, tremor of the hand, tongue and lips was marked. Arm movements were ataxic. The tongue went to the left when protruded. The right iris was covered by a film and vision in this eye was absent. The pupils were unequal, the right larger than the left. The right reacted only a little to light stimuli. A watch was heard only when held close to the ear. Patella, tendo-Achillis, wrist, and elbow reflexes were absent. Superficial reflexes present. A zone of anæsthesia for pain and tactile stimuli extended around the body from the third to the sixth rib. Above and below this sensations were normal. Symmetrical areas of anæsthesia were present on the inner side of the forearms and inner side of the legs. Attempts to write gave only a few scratches. Mentally she was dull and stupid. She was able to name the place, but otherwise was disoriented and had no appreciation of her environment. She could not retain names or numbers. Simple calculations were done correctly but slowly. Her whole attitude was one of advanced dementia. There were no spontaneous speech productions nor any evidence of hallucinations or delusions. She had insight only to the extent that she realized that she was not as well as formerly. During the remainder of the course there was a progressive physical failure, her mental state being one of apathetic dementia. She died a month after admission from myocarditis.

Anatomical findings.—Chronic and acute myocarditis; pulmonary hypostasis and general arterio-sclerosis. The brain weighed 1110 grms. The pia showed a moderate degree of chronic leptomeningitis. The basal cerebral arteries presented a high degree

of arterio-sclerosis. Externally the brain showed no gross abnormalities. In the white substance of the hemispheres there were several small cysts scattered irregularly, one somewhat larger, about 5 mm. across, lay in the tip of the right internal capsule. The basal ganglia were porous. In the pons there were several small cysts scattered among the fibers of the pyramidal tract. Microscopically the cortical vessels were severely diseased, not only the arteries, but sometimes the veins were sclerotic. In some vessels there were several thicknesses of intima. The endothelial nuclei of many capillaries would not stain normally. The superficial arteries were more often sclerotic than the deeper. About the sclerotic vessels of the white substance there was sometimes tremendous increase of coarse glia fibers and in these instances the region was dotted with numerous myelin bodies. Pigment phagocytes were generally present in or about the adventitia of the larger vessels. Nowhere were there any lymphocyte infiltrations. The glia nuclei were rather uniformly increased through all the the nerve cell layers. The nerve cells were nowhere of healthy appearance and in a few places there were small foci where nerve cells had disappeared and those remaining showed very severe changes.

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In the cord there were degenerations in both lateral and posterior columns. In both lateral columns this degeneration corresponds to the position of the crossed pyramidal tract and was visible through the entire length of the cord as low as the second sacral level. The anterior columns were unchanged. In the posterior column there was an ascending degeneration corresponding topographically with that of tabes. At the second sacral level the entering posterior root fibers were degenerated and the median parts of the column were unchanged. In the fifth lumbar region there were degenerated entering root fibers and a broad area thinned of fibers spreading through the entire posterior column excepting the ventral median zone and along the dorsal margin. In the first lumbar region the entering root fibers were healthy. The degenerated area appeared as two pale streaks placed more toward the median septum. In higher levels the degenerated area became more compact and lay closer to the septum and at the fourth cervical level it was a wedge-shaped area lying wholly in Goll's column.

We have analyzed the above group of four cases of arterio-sclerotic brain atrophy and one other, the description of which we have omitted. In this group of five cases it was noted that a weakness of the retentive memory was among the earliest symptoms. The comprehension and orientation were preserved for a considerable time. Hallucinations were present in three cases; these were auditory and in one instance also visual; they were merely episodial and never were very marked. The early forgetfulness farther on in the disease became more marked in three cases; these patients could not retain the simplest impressions. The association processes were never active; in all there was a marked dulness and lack of any productivity. Delusions were episodial in three cases; they were never common and were of the nature of ideas of suspicion and soon faded away; in only one instance was there any reaction to the ideas held. One patient for a short period expressed a few expansive ideas, yet they were never marked. There was great variability in the emotional tone, rapid variations between lighter and sad moods; never was there a constant depression. The mood in all cases tended to apathy and absolute indifference to their environment. Ability to do any intellectual work early disappeared, and in all, the end-stage was a more or less profound dementia.

As etiological factors, there were present in two cases moderate use of alcohol and in one probable syphilis. Four had hereditary influences, in three there was a history in the parents of shock and paralysis with insanity, and in the other of insanity with death from Bright's disease. In four there was a history of disturbances ascribable to vascular derangement, such as shocks or congestive attacks before the onset of the mental symptoms. The course of the disease varied somewhat but, excepting in the case R., it was a progressive dementia with marked memory disturbance and prominent focal symptoms.

Each case had marked physical disturbances. In three there were superficial evidences of arterio-sclerosis, such as thickened arteries. In four there was a systolic murmur of the heart with accentuated second aortic sound; in the other the heart was noted as being enlarged towards the left. In three which had urine examinations, there was clinical evidence of nephritis.

In four there was an articulatory speech difficulty early in the

disease. In three it followed a shock. In one it developed gradually. Two presented aphasic symptoms. All had at some time during their course apoplectiform or epileptiform attacks; in only one was it the first symptom. The reflexes showed little in common. In three they were normal, in one exaggerated, in one they were absent. Pupils were normal in three, unequal in two, and sluggish in one. The superficial reflexes were unimpaired; the organic reflexes in two were disturbed.

Anatomically there was present in all a general arterio-sclerosis. The heart, excepting in the case C., weighed over 350 grms. The kidneys all presented a severe arterio-sclerosis with varying degree of interstitial proliferation. The larger arteries of the brain were all severely sclerotic. The weight of the brain was a little diminished. All showed chronic leptomeningitis; gross atrophies of the convolution were not present, cysts, focal hæmorrhages, or softenings were present in all except case R. These were always small, the largest not more than 1 cm. in diameter. Most of these lay irregularly distributed throughout the white substance of the hemispheres—twice in the internal capsule, twice in the pons, and once in the occipital lobe. The hæmorrhages were circumscribed and all lay in the cortex. The basal ganglia in each instance showed widened vessel spaces. Microscopically the fine cortical vessels presented varying degrees of arterio-sclerosis with multiple focal degenerations of the nervous tissue and proliferative glia phenomena.

In the clinical diagnosis of this group of cases there comes into question first of all general paralysis. The age, sometimes the mode of onset, the various focal disturbances with profound memory weakness and progressive dementia may simulate general paralysis closely. There is very little difference between the ages of development of the two diseases. The history of vascular or similar mental disturbances in the ancestors and relatives is apparently an important point; the hereditary taint in general paralysis is high, yet of a different nature. Antecedent syphilis may be present in both diseases. In one of our clearest cases, that of L., there was a history of previous infection. The cases with specific syphilitic vessel disease do not come into question here. In the mode of onset, the arterio-sclerotic cases often show disturbances referable to vascular derangement before the mental

disturbance, such as dizzy attacks, or distinct "shocks." In general paralysis it is rare for the disease to begin with an attack, generally it being possible to find evidences of mental change for a longer or shorter period before the "attack." During the course of both diseases "shocks" or "convulsions" are often present but probably of greater frequency in the arterio-sclerotic cases. In general paralysis Heilbronner[6] finds that 60 per cent of the cases have focal attacks. Kraepelin[7] gives 36 per cent. The attacks in arterio-sclerotic brain atrophy appear to be more severe in their results than in general paralysis. The focal symptoms in the former disease often can be related to a shock. Speech-disturbances are common in both. The articulatory defect may be quite similar. The aphasic disturbances, which are common in the arterio-sclerotic cases, are generally of longer duration than in general paralysis where aphasia often disappears after a little time. The memory disturbance in each is very prominent; Kraepelin regards the disturbance of the past memories as more marked in general paralysis than arterio-sclerosis.

A very important differential point is the lack of the prominence of delusions. They may be entirely absent in the arterio-sclerotic cases and when present never at any time dominate the picture. These delusions are generally of the nature of suspicions and persecutory ideas with very little reaction. The patients are strikingly unproductive; expansive delusions are very rare. The mood is rarely severely depressed or euphoric. Generally it is one of apathy or emptiness. The dementia in each may be equally profound. A greater degree of insight into their disease is present in arterio-sclerosis than in general paralysis. The reflex disturbances, so common in general paralysis, are of less importance in arterio-sclerosis. Pupillary irregularities and inequalities may exist, yet loss of light reaction is rarely present. The knee-jerks may be unequal, generally they are exaggerated. The diagnosis is very difficult or quite impossible clinically in such cases as that of C., where we have a marked arterio-sclerotic brain process and at the same time a tabetic posterior column disease. Always of diagnostic aid would be the physical signs

[6] Heilbronner: Allg. Zeitschr. f. Psych., Vol. 51, p. 22.

[7] Kraepelin: Psychiatrie, 1904, p. 303.

of general arterio-sclerosis, such as the heart and kidney changes and the sclerosis of superficial arteries.

The most important difference between the two diseases is explainable from the anatomical process in that general paralysis is a diffuse disease and arterio-sclerosis is pre-eminently a focal process; yet there are cases of atypical paralysis, such as described by Lissauer,* where, in addition to a diffuse cortical disease, the paralytic process may be more severe in one region than another.

The largest group of cases of arterio-sclerotic brain disease is that in which there is a more coarse destruction of brain tissue than in the cases above described. In this group there are included the cases of softening and hæmorrhage commonly classed as cerebral apoplexy. The cases where the lesion is due to an embolus and no disease of the cerebral vessel is present are naturally not considered here. The arterio-sclerosis in these cases is chiefly present in the larger vessels, yet a very large number of these cases, especially those which come into insane hospitals, have in addition to these coarser lesions arterio-sclerosis of the finer cortical vessels with focal destruction of small areas of the cortical nervous elements. Many of these cases give a history of mental change before the shock. The clinical picture of these cases is dominated by focal symptoms, such as aphasia and various paralyses. The aphasia present often makes the interpretation of the amount of dementia present quite difficult. These cases are to be differentiated from those cases occurring in senile years where, in addition to a more or less characteristic senile dementia, there are focal evidences of arterio-sclerosis. Clinically this is possible but anatomically this is difficult, seemingly the only difference is the absence of those changes which we have come to regard as characteristic of senile brain atrophy. The arterio-sclerotic process of each is quite similar.

A case illustrative of this class is the following:

CASE G.: Arterio-sclerotic brain atrophy with coarse lesions.—Onset with depression at 58 with little progressive mental change until a shock at 66, which was followed by motor and aphasic symptoms; in the further course there were episodes of excite-

*Lissauer-Storch: Ueber einige Fälle atypischer progressiver Paralyse. Monatsschr. f. Psych. und Neurol., 1901.

ment, the clinical picture was that of a dementia the extent of which was difficult to determine on account of the aphasic disturbances; at the end of seven years death occurred from pneumonia.

Anatomical findings: Severe sclerosis of the larger and smaller cerebral vessels; large focal softenings; multiple focal cortical devastations.

G.—Female. Hereditary history of a sister dying of "dropsy." At 58, after the death of two children, she became depressed and her disposition changed. The duration of this depression was not stated. At 66 she had a shock followed by loss of vision and inability to speak clearly; she recovered physically from this with the exception that there persisted a difficulty of speech. Mentally she was changed, she became irritable, held vague delusional ideas and in the same year was admitted to Danvers. The physical examination showed a marked sclerosis of the superficial arteries. The reflexes were normal, she could see and hear. "Her speech was an unintelligible paraphasic jargon." The left hand was used better than the right. She was irritable, at times apprehensive and resistive. At first she did not recognize her food as such, but later learned to eat when it was given to her. She paid no attention to objects, wandering aimlessly about the ward, often undressing during the day. Later she would only utter a few gutteral sounds. There was little change in her condition for several years. At times there were short episodes of excitement. At the end of seven years death occurred from pneumonia.

Anatomical findings.—Fibrous pericarditis; slight atheroma of the first portion of the aorta; chronic nephritis. The brain weight was 870 grms. The basal and meningeal arteries were extremely sclerotic with calcareous plates in many places. The lumen of one posterior branch of the left middle cerebral artery was obliterated by thickened walls. The pia was thickened and adherent to the cortex in the regions of softening. Except for the focal softenings the convolutions showed little change. There was a linear streak of subcortical softening in the right first temporal convolution which extended backward behind the parieto-occipital fissure. In the left hemisphere there was a similar but larger subcortical softening in the region just below the interparietal

fissure, corresponding to the distribution of the obliterated artery. Another focal softening involved the left operculum.

Microscopically, apart from the regions of softening, there were severe sclerotic changes of the finer vessels with multiple focal cortical devastations. There were also a number of small focal softenings in the cortex. These finer cortical changes corresponded closely with those described above in the cases of arterio-sclerotic brain atrophy.

Arterio-sclerosis of the cerebral vessels is of common occurrence in senile dementia, yet there are not a few cases in which it is absent. At present one does not seem justified in regarding senile dementia as a pure arterio-sclerotic brain disease. In senile years the brain undergoes an atrophy analogous to that of other organs. This is manifested in degenerative changes in the nerve cells and fibers, which may disappear, often in large numbers, leaving areas of the cortex which contain strikingly few cells and without general distortion of the cortical architecture. The nerve cells are commonly highly pigmented; not only is pigment present in the larger pyramids but also in the smaller cells of the upper layers. Many nerve cells show the condition of chronic shrinkage. The glia nuclei are mostly of a small dark type, often with shrivelled angular bodies, quite commonly pigmented. The blood-vessels are changed but not sclerotic; their nuclei are shrunken, deeply stained, and their walls and perivascular spaces contain pigment phagocytes. Although the process is generally diffuse, it sometimes is of greater intensity in one place than in another, as a result there are cases of senile dementia with focal symptoms not referable to arterio-sclerotic changes.

The relation of arterio-sclerosis of the cerebral vessels to senile dementia is not easy to determine; this may be due partly to the rather mixed character of the clinical group called senile dementia which doubtless contains several different types varying clinically and anatomically. One cannot get a clear picture of an arterio-sclerotic psychosis from the cases occurring in this period, and in analyzing our limited material it was found quite impossible to draw marked clinical distinctions between senile dementia and an arterio-sclerotic psychosis occurring in senile years except as the diagnostic criteria were the occurrence

of focal brain symptoms. Anatomically, the arterio-sclerotic cases do not differ from the cases we have above described except in their association with the senile brain atrophy.

In senile years there occur at least three anatomical varieties of arterio-sclerotic brain disease, all associated with senile tissue changes, viz., coarse arterio-sclerotic lesions, such as large softenings, arterio-sclerosis of the cortical vessels with focal devastations, and the perivascular gliosis. These may be associated in varying degrees with one another. The commonest cases are those with large softenings of the white substance and the least common is the perivascular gliosis.

From a considerable number of cases of senile dementia associated with arterio-sclerotic brain disease we have selected the following:

CASE H.: Senile arterio-sclerotic brain disease with prominence of finer cortical changes.—Onset with shock at 54 followed by a slight memory defect without progression until 70. Then gradual senile mental deterioration, inability to work, apprehensive mood; later, more severe shocks with persistent focal symptoms, aphasia, disorientation, intellectual deterioration to a profound apathetic dementia.

Anatomical findings: Brain atrophy; diffuse senile changes; severe arterio-sclerosis of cortical vessels with colloid degenerations, small focal disintegrations of cortical elements.

H.—Male. Hereditary history of father dying of apoplexy, mother of heart disease, one brother of Bright's disease, and another of apoplexy. Alcohol and syphilis denied. At 54 had a shock and was dazed for some hours but not unconscious. Physical recovery was apparently complete but memory was never as good as before. Since seventy he has been deteriorating, he became more forgetful, at times he was apprehensive, and he became unable to work. At 72 he had another shock with slight left hemiplegia. His general physical failure was now more rapid. At 74 another and more severe shock with unconsciousness for a few hours was followed by aphasic symptoms, two months later a slight shock, since then he has been unable to care for himself. He was then admitted to Danvers. Physically, he was of senile appearance. The noteworthy findings in the examination were: Sclerosis of the superficial arteries; enlarged heart; chronic neph-

ritis, and œdema of the legs. Muscular movements were done with slight feebleness and uncertainty. He heard ordinary conversation, no evidence of blindness or hemianopsia. Left facial paralysis. Pupils medium-sized, margins irregular, the left a little larger than the right. Light reactions present. Tendon reflexes present. The left knee-jerk livelier than the right. Sensations apparently unimpaired. Speech was paraphasic with wrong use of words and much circumlocution; he misnamed objects yet indicated their use. Handwriting tremulous with elision of letters. He was restless, wandering about his room. Mentally he was dull, comprehended questions poorly. Completely disoriented. Memory profoundly impaired, could not retain the simplest impressions. There were no delusions or hallucinations. He took no interest in his environment. His mood was irritable, easily angered, and as easily pacified. For five months there was gradual yet progressive failure, becoming bedridden. He suddenly became comatose and died after twenty-four hours.

Anatomical findings.—General arterio-sclerosis; hypostatic pneumonia; chronic nephritis. The brain weight was much diminished, weighing without pia 1080 grms. The left hemisphere was 15 grms. lighter than the right. The cerebro-spinal fluid was much increased. The pia was thickened over the frontal lobes. The basal vessels were severely sclerotic with multiple atheromatous plaques. The convolutions were atrophied everywhere excepting in the occipital region. The consistency was a little firmer than usual. The cortex was irregularly flecked with fine injected vessels. There was only one gross focal lesion present in the hemispheres, a small partitioned cyst about 3 mm. in diameter in the white substance beneath the left angular gyrus.

Microscopically, the changes present were chiefly in the fine cortical vessels, with a great variety of types of degenerated nerve cells. Nowhere were there extensive areas of focal devastations. Many nerve cells were of the chronic shrinkage type. One very common form was of a very severe degenerative process leading to complete destruction of the cell; all parts of the cell atrophied and shrank together, the nucleus lost its membrane, shrank into an irregular shape, and with the nucleolus lost its staining capacity; often all that one found was a small fragment of cell body

in which was recognizable with difficulty a severely injured nucleus and nucleolus. These lay scattered singly or in small groups. The larger nerve cells were highly pigmented; not only was the pigment placed in the basal parts of the cell but large deposits lay above and at the sides of the nucleus, some had undergone a complete pigmentary degeneration, all that was left being a pigment sack with a shrunken nucleus pushed against the wall. The small pyramids of the upper layers were generally pigmented. In general, the glia cells of the cortex were relatively increased and mostly of the regressive type. In a few places there were small groups of swollen progressive glia cells. The focal character of the degenerative changes was only recognizable under high magnification. The arteries of the cortex were severely diseased, in many vessels the endothelial nuclei would not stain, in some the intimal cells were increased, narrowing the lumen, in places the elastica was degenerated so that it could not be differentiated from the connective tissue of the wall. The walls of many capillaries were of irregular, jagged outline. Clusters of vessels in cross-section were met with in many sections. Nowhere were there true infiltrations of the vessel walls. In the left calcarine region there was a strip of vessels which had undergone colloid degeneration; this extended as a streak in the fifth layer and was best marked at the bottom and along the sides of the convolution and was absent at the top. The walls of the vessels here were bordered or mingled with round, oval, or long homogeneous masses giving the reactions of hyaline. The best preserved vessels were bordered by fine beads of the substance. In some the whole wall was obscured by the bodies. Some vessels in this region appeared as swollen homogeneous rings. The elastica was demonstrable in some of these vessels in which everything else appeared changed into hyaline material.

CASE L.: Senile arterio-sclerotic cortical devastation.—Gradual onset at 67, episodes of confusion, apprehensive mood, ideas of suspicion, poor comprehension, marked memory-weakness, profound intellectual deterioration, becoming later apathetic, stuporous; death from pneumonia; duration five years.

Anatomical findings: Brain atrophy; severe sclerosis of cortical vessels with multiple focal devastations.

L.—Male. Hereditary history: one son a criminal and one

daughter weak-minded. Alcohol and syphilis denied. At 66 he was an inmate of an old people's home. At 67 beginning mental failure, becoming later so confused and demented that he could not find his way about. His mood was somewhat apprehensive, at times he imagined that some one was to steal him away. At his admission to Danvers he was of senile appearance, arteries somewhat thickened, the heart was a little enlarged, and the second aortic sound accentuated. The tongue and hands were tremulous. Pupils equal, react sluggishly. Knee-jerks not stated. Gait a little unsteady. Mentally, he was disorientated, his comprehension was poor, some objects were incorrectly named, others were given without mistake, the memory was defective for early and recent events, all intellectual tests were poorly done, the further course was a gradual mental and physical deterioration. He never became oriented, his mood became empty and much of the time he was stuporous. Later, he became unable to carry on conversation, and at the end was totally unable to articulate. He was bedridden; finally he developed contractures of the legs and died of pneumonia.

Anatomical findings.—Septicæmia, broncho-pneumonia, chronic nephritis. The brain weighed, with the pia, 1110 grms. The pia showed considerable degree of chronic leptomeningitis. The basal and meningeal vessels showed slight and uniform thickening, yet, except for one small patch, they were free from atheroma. The cerebro-spinal fluid was much increased. The convolutions had a peculiar rusty brown color; in all regions they were narrowed and had coarse, uneven surfaces. In the brain substance there were no gross focal lesions.

Microscopically, the larger arteries of the white substance were not notably altered, the small cortical vessels presented a severe degree of arterio-sclerosis, there were numerous wedge-shaped patches of devastation with glia proliferation in various cortical regions. The nerve cells showed senile changes with marked pigmentation. Heavily pigmented phagocytes were scattered numerously through the upper part of the cortex. The glia cells of the superficial layer contained much fine, yellow-brown pigment. Apart from the larger foci of devastation there were many small patch-like degenerations of the cortical elements.

In addition to the above cases of senile arterio-sclerosis, the

following anatomical findings are given of a case of which but little history was obtainable but which clinically presented the picture of presbyophrenic senile dementia. At no time were focal symptoms noted. As far as known the duration was about three and a half years. The anatomical findings were of the nature of an extensive perivascular gliosis. The brain weighed 1140 grms. In places the pia was considerably thickened. The basal arteries were free from atheroma but uniformly a little thickened. The cerebro-spinal fluid was greatly increased. In both temporal regions the convolutions showed extreme atrophy. The convolutions of the island of Reil on both sides were reduced to low ridges, the cortex lying almost flat on the external capsule. These atrophied regions were of greatly increased firmness. Microscopically, there was a severe arterio-sclerosis of the vessels of both white substance and cortex, especially marked in the regions of atrophy. In these latter parts there was almost complete disappearance of the nervous elements, the regions being filled with masses of glia fibers. Away from the regions of gliosis there were many small foci of arterio-sclerotic devastations.

The clinical picture of the above group of senile arterio-sclerotic brain disease is that of gradually increasing change of character with forgetfulness, inclination to fabulate, loss of judgment, disorientation, narrowing of external interests, episodes of confusion and hallucinatory delirium, delusions of persecution and suspicion; at times there may be apprehensiveness, but this usually soon fades away into a more or less deep apathy, the end stage being a profound dementia. This corresponds quite closely to the picture of senile dementia but, in addition, we have in these cases focal symptoms referable to vascular disease, such as shocks, focal paralyses, articulatory speech-defects, aphasic symptoms, and the signs referable to a general arterio-sclerosis.

We have analyzed clinically and anatomically a group of sixteen cases, of ten of these in which information was present, seven had a hereditary history of insanity or shocks; these latter, in the majority of instances, being in antecedents during their senile years. In none was there a history of excessive alcohol, of seven cases three drank moderately, four denied the use of alcohol. The average age of fifteen cases was above sixty-eight years.

The duration averaged three and a half years. Of fifteen cases, eight gave a history of shock, and in all except one mental symptoms were noted before the shock. Six were aphasic, in five this was a simple paraphasic disturbance and one had total aphasia following hæmorrhage. In twelve the condition of the superficial arteries was noted, in eleven of these there were signs of sclerosis, six gave clinical evidence of heart lesion, and seven of nephritis. The knee-jerks were noted in twelve, twice they were exaggerated, twice unequal, and eight times normal. The pupils were normal in ten, sluggish in two, unequal reactions in one, in four they were of irregular outline, and four were of unequal size.

Of all these cases none were free from arterio-sclerosis of the vessels of the internal organs. Twelve could be regarded as presenting general arterio-sclerosis. The vessels of the Circle of Willis, or their branches, were sclerotic in thirteen. Of the sixteen cases, in eight the sclerosis was limited to the larger brain vessels, in eight it involved the finer cortical vessels, or both. The average brain weight was diminished. The weight was somewhat lower in those cases where the sclerosis involved the finer cortical vessels. Eight cases had, sometime during their course an apoplectiform attack, five of these had cysts or areas of coarse lesion; in the other three there were very severe changes in the finer cortical arteries. There were cysts indicative of old brain lesions, in four cases in which there was no history of shock or clinical evidence of focal lesion.

EXPLANATION OF FIGURES.

FIG. 1, CASE L.—Arterio-sclerotic brain atrophy. Cortex showing wedge-shaped area of devastation among the nerve-cells in the field of a sclerotic vessel. Nissl stain. Mag. 57.

FIG. 2, CASE L.—Arterio-sclerotic brain atrophy. Cortex, with a wedge-shaped area of degeneration, similar to that in Fig. 1, filled with coarse glia fibres. Heidenhain stain. Mag. 160.

FIG. 3, CASE H.—Arterio-sclerotic brain atrophy; senile cortical devastation. Sclerotic vessel in medullated substance of convolution. Elastica stain. Mag. 240.

FIG. 4, CASE C.—Arterio-sclerotic brain atrophy with tabes-like symptoms. Spinal cord showing degenerations in lateral pyramidal tracts and in posterior columns of VI cervical, VII dorsal, I lumbar, V lumbar, II sacral regions. Weigert stain. Mag. 10.



FIG 1.



FIG. 2.



FIG. 3.

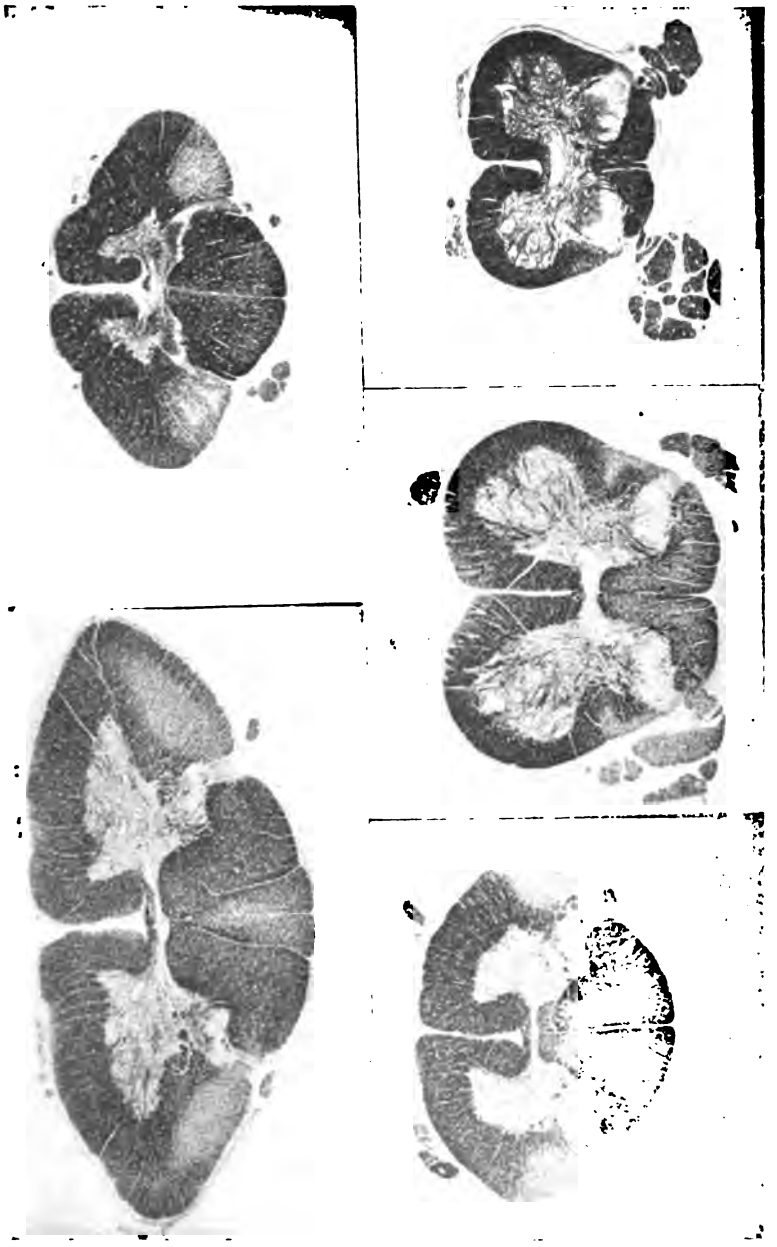


FIG. 4

KORSAKOFF'S PSYCHOSIS—REPORT OF CASES.[1]

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Several articles have appeared within the last few years devoted to Korsakoff's "Psychosis" or Korsakoff's "Syndrome," but of these only a small proportion have appeared in English journals. The question as to whether it is a disease entity or a symptom complex common to several different conditions has been under discussion and seems not yet to be settled. Additions and contributions to our knowledge on these points are still much to be desired, and it is with the hope of adding, even though slightly, to our knowledge of this condition that I present these five cases.

In the bibliography following the excellent article on Korsakoff's "Psychosis," by Harry W. Miller, pathologist and assistant physician at the Taunton Insane Hospital, which appeared in the American Journal of Insanity for January, 1904, and to which I here acknowledge indebtedness, there are twenty-two articles referred to; of these there are but five in English. In the article in "Brain," published in the autumn of 1902, by Sidney John Cole, entitled "On Changes in the Central Nervous System in the Neurotic Disorders of Chronic Alcoholism," there are in the bibliography thirty-eight articles referred to, of which but fourteen are in English, and many of these are devoted to multiple neuritis. Korsakoff published his first article in 1887 and characterized the disease as a polyneuritic psychosis, and suggested the name "Cerebropathica psychica toxemica," as a more fitting designation in view of the fact that the neuritic phenomena might not be prominent. A number of observers took issue with him in his view that the disease was a clinical entity and insisted that it was a clinical picture which might accompany other diseases, and that it was not individual and characteristic.

[1] Read by Dr. A. W. Hurd, at the Annual Meeting of the American Medico-Psychological Association in San Antonio, Texas, April, 1905.

In the mental field the most prominent symptoms are memory weakness, persistent inability to retain impressions, loss of orientation, and falsifications of memory. That it is a toxic condition seems to be conceded; that it may be a toxic condition operating upon the central or peripheral nervous system, or both, also seems established. Whether the toxæmia is the result of direct poisoning, or is autotoxic, developed on the field prepared for it by other poisons, is open to consideration. That alcohol is by far the most frequent toxic agent is evident from a study of the recorded cases, but that other causes may be efficient would appear from a small number of cases in which it seemed to follow typhoid fever, lead poisoning, arsenic, tuberculosis, and leukæmia.

The clinical symptoms in the cases here presented, give, I think, a fairly definite mental picture of the condition, and it may recall to the minds of my hearers similar cases coming within their observation.

Onset and Course.

The symptoms may directly follow an acute intoxication, with delirium tremens, the symptoms of the latter persisting in a milder form with disorientation, fabrications of memory, occupation delirium, memory weakness with or without evidences of polyneuritis. In some the long-continued delirium with some febrile reaction may suggest an acute encephalitis. Other cases may present first symptoms of neuritis with mental confusion and memory weakness coming afterwards. Others again, without evidences of an acute toxæmia, may develop mental symptoms first, to be followed by neuritic symptoms later, and some even have been reported as having the disease ushered in by symptoms of a toxæmia with even epileptiform convulsions, or an apparent apoplectic attack. The disease runs a comparatively long course if the patient does not, as is possible, die from the violence of the toxæmia in the initial delirium. The neuritis may run a course of weeks and months with recovery both mental and physical, as in two of our cases. Others pass through a long course of mental enfeeblement, delirium, and confusion, with pain, paralysis, and trophic ulcers, gradually to improve and even recover from the neuritis, but leaving a degree of dementia, weakness of memory, and confusion, which becomes a chronic condition.

The abstracts of the histories of the following cases have been prepared for me by Dr. Henry P. Frost, first assistant physician, Buffalo State Hospital.

CASE No. 1.—Man; aged 71; widower; occupation, brickmaker; nativity, England. Admitted January 5, 1905. Said to have had locomotor ataxia for ten or twelve years; pneumonia in 1901 and 1903, and chronic dysentery since the Civil War. Contracted syphilis in early life. Married in 1863; wife bore no living children but four were still-born. Has taken a wine-glass of whiskey before meals for years; became intoxicated occasionally. Drank more than usual last fall after the death of his wife, and his present mental symptoms date from that time.

In the commitment paper it is stated his mind seems to be a complete blank, is wandering and disconnected in conversation, easily confused; imagined that his nurse was his wife, also that his wife was in the next bed to him in the General Hospital. He looks for his revolver under his pillow, etc.

On admission and during his stay (three months), he was quiet, tractable, pleasant in his manner, able to understand his surroundings perfectly and to give a correct account of the remote past but with complete amnesia for everything recent. Constant fabulation; would give a detailed account of what he had done the day before, often relating adventures, such as street fights, in which he punished his assailants. He invariably stated that he "came here this morning" and that he walked all the way. Admitted that he did not feel very well and excused it on the ground that he had been on a "little spree" the night before. Aside from these symptoms his mind was clear and his intelligence unimpaired. No hallucinations at any time while under observation.

Physical Examination.—Patient emaciated; in poor physical condition; weak, requiring assistance in walking; complaint of headache, dizziness, shooting pains in limbs, stomach, and chest; numbness in all of the extremities; prickling feeling in hip and spine and running down the legs.

Eyes.—Pupils normal; no strabismus. Nystagmus in extreme lateral positions, and also when the eyes are turned upward. Vision poor.

Hearing, smell, and *taste,* all a little defective.

Cutaneous sensibility.—Slight defect of tactile sense in legs and feet; hyperæsthesia to painful impressions; temperature sense normal. Localization of touch good in upper extremities; poor in lower. Muscular sense defective in feet—patient could not tell which toe was manipulated by examiner. Co-ordination good in arms; fair in legs.

Deep Reflexes.—Present in left arm; absent in right. Knee-jerk and Achilles reflex absent in both legs.

Superficial Reflexes.—Plantar and abdominal normal. Cremasteric absent.

Motor Functions.—General impairment of strength; most marked in extensors of feet. Foot drop on both sides. Steppage gait; uncertain station. Tenderness of muscles and nerve trunks, especially in lower extremities. Atrophy of thenar group in both hands.

Slight tremor in tongue, lips, and hands. Fibrillary twitching of atrophied muscles in hands. Sphincters normal.

Patient was discharged three months later. Condition the same as on admission except improvement in general physical condition.

CASE No. 2.—Woman; admitted March 15, 1903; age 27; prostitute; history of gross intemperance for a long time; drank whiskey principally. Some signs of derangement two months before, when she appeared stupid and spoke of things disappearing mysteriously when she really misplaced them herself. About that time, two epileptiform (?) seizures. A week before admission here she had delirium tremens.

On admission patient showed a good deal of confusion; was disoriented in time and place; could not give a correct account of the journey to the hospital. She had no recollection of having seen imaginary objects, etc.

She complained of pain in the eyes and in her feet, which she said were frozen a few weeks ago. There was divergent strabismus; pupils normal; accelerated and feeble heart action; much gastric disturbance, vomiting everything ingested; acute inflammation of tongue and mucous membrane of mouth, tongue being swollen, red, and shiny. Temperature 100°. Pulse 108.

During the first few days patient seemed to be free from hallucinations. She recalled things she had imagined and recognized

them as unreal. She recalled seeing animals and figures "like statues" ranged round a hall; also a woman in black and two men who seemed to be mesmerizing her mother; a girl with snakes twined about her; various animals scattered about, etc. She was fairly composed during the day but restless at night, sleeping very little, taking only milk and beef juice in small quantities, occasionally vomiting. Then for several days and nights she was more confused and excited; thought there were various animals and objects in bed with her; would sometimes strke at these and cry out angrily. Said that some animal had bitten her; she saw and heard people in the room; felt worms crawling on her body and saw them on the bed.

Temperature 99° to 101°. Heart very weak; pulse 130 and over.

March 22, 1093.—Denies hallucinations, but says when left alone she "imagines all sorts of foolish things"; picks at the bed-clothing, sometimes twitches all over, complains much of pain in her feet and legs which are very sensitive when handled.

March 27.—More pain in lower extremities; complains that some one is screwing her feet to the bed. She can flex the ankles very little and move the toes but feebly. Has foot-drop on both sides. She often starts out of a doze and twitches violently. There is coarse tremor of the arms. Patient is completely disoriented; mood happy—orders drink and talks to imaginary companions; mumbles unintelligible answers. Her attention can be held for a few moments only.

April 6.—Still completely lost; talks incoherently; mistakes people about her, and has no correct idea of time and place. She reaches for imaginary objects and goes through the motion of winding thread, tying knots, etc. Is placid and happy except when disturbed by pain; often whispers softly and laughs.

She is very helpless, cannot turn over or raise herself in bed. Pulse continues very rapid, usually about 140. She is troubled with a cough and has a bad diarrhœa.

May 19.—Patient fabulates freely—says she came here yesterday; was out for a walk to-day; has been out for a drive, etc. Physically she is better; digestion improved.

June 30.—Marked memory defect. Does not know whether she was here last week or not.

The mental symptoms gradually disappeared until in September it is noted that there only remains a difficulty in estimating the lapse of time. Steady gain in weight and strength, gradual disappearance of paralysis and pain in the legs; treatment—massage and Faradism.

For a long time after reaching a normal mental condition patient remained lame and had some pain and paraesthesia in the feet. At the end of one year from the date of her admission she had practically recovered, showing only a mild weakness of the extensor muscles of the legs and slight stiffness of gait. Normal mental condition. Good insight. Discharged recovered.

CASE No. 3.—Mother of last case. Admitted August 11, 1903. Age 49; married. Has been addicted to morphine and was said to have been moderately intemperate in the use of liquor. (This was afterward positively denied. There was no gastric derangement so the statement about abuse of liquor may have been erroneous.)

She is committed from a general hospital where she had been for two weeks, during which time she was hallucinated—saw animals, imagined her children were being murdered, said her husband had died and she wished to attend his funeral, said bats came from the the ceiling and flew in her face, etc.

On Admission.—She is in poor physical condition, weight 100 pounds. Many scars from hypodermics on both arms. Temperature normal. Pulse 84. Heart and lungs negative. Tongue clean and steady. Pupils unequal, sluggish reaction to light; external strabismus of right eye; some drooping of both lids; vertical nystagmus in both eyes when looking upward. Gait unsteady, swaying. No Romberg. Knee-jerks normal. Complaint of pain in feet. Left foot and calf tender.

Mental Condition.—Patient was completely disoriented; thought she was in the postoffice in Toronto. She called the physicians and nurses by the names of people whom she had known previously. She spoke of her husband's funeral as going on. She had no recollection of being in the other hospital. She was drowsy and slept most of the first day.

On the following day she was more excited and restless; was annoyed by hallucinations of hearing—thought her children called

for help and that her brother had been killed. When directed to look at the blank wall or the bed clothes, she saw snakes and fish, a child, a woman's face, a yellow woman, a sideboard with imitation drawers, etc. Visual hallucinations elicited by light pressure on eyeballs also.

Hallucinations and confabulation persisted for three weeks, and during this time it is noted that "she can be recalled to a knowledge of her surroundings but her mind immediately wanders; she forgets in a few moments what is told her, never remembers the doctor's name though told daily. She fumbles with the sheet; says it is a white silk dress with a yellow spot. Mood sometimes cheerful but usually a depressed condition. Complains of pain in calves and feet, and numbness of fingers of right hand."

After one month she was clear. The memory defect had disappeared; she recalled her distressing hallucinations and delusions; had good insight. Convalescence was rapid and patient was discharged recovered after four months.

CASE No. 4.—Woman. Admitted December 6, 1904. Age 46; married; no children.

Family History.—One brother died of tuberculosis and was insane for three months before his death. Another brother is a drunkard.

The patient has been drinking to excess for at least twelve years, and last summer she began to take morphine to make her sleep.

Present trouble began three weeks ago with delusions and confusion and complaint of "stomach trouble."

Statements in the commitment paper are: "She said she was out in the country having an awful time; that her husband was down the river; that she was cooking a turkey and going to a dance; that her mother and father (both dead) are here. She soliloquizes in a loud whisper and her face shows disturbance and anger. She gets out of bed at night and wanders around; sees crowds of people coming and going. Mistakes her surroundings. She is confused as to the day of week and time of day. Thinks each day is Sunday and that she has been to mass. Says she was at a funeral day before yesterday and worked at home all day yesterday (both statements untrue)."

On Admission.—The patient was completely disoriented in time and place and could give no account of recent occurrences. She made many contradictory statements, forgetting in a few moments what she had said before. She was emotional and occasionally wept.

Physical Examination.—Patient was in poor physical condition. Tongue and hands tremulous. Pupils unequal but with normal reaction to light and accommodation. Knee-jerks absent. Heart rapid and feeble. Pulse 120. No murmur. Slight bronchitis.

Since admission there has been gradual physical improvement, but a good deal of indigestion and much complaint of rheumatism (pains in legs). Knee-jerks still absent.

Patient is usually cheerful. She understands her present surroundings and has no hallucinations but many falsifications of memory. She will answer quickly and confidently but her statements are contradictory as at first. She continues to relate imaginary happenings of yesterday or last week, etc., forgets the doctor's name from day to day. Her mental condition four months after admission seems stationary.

CASE No. 5.—Woman. A dressmaker (U. S.); divorced; age 38; mother of two children. Intemperate in habits.

Admitted June 18, 1901, with a history that she had had two previous attacks of mental excitement which were short in duration and maniacal in character, from both of which she recovered.

Present trouble began about three weeks before admission. It was characterized by a lack of interest in her surroundings and a restless, uneasy condition. She talked in a rambling, foolish way and made remarks something like the following: "I am determined to know why people are crazy and in the asylum. I am investigating their conditions." She said she heard beautiful music, the sound of flowers and the spray of water.

On Admission.—She was excited and in a playful mood; she seemed to be elated and rather pompous in her conduct, but at times became irritable and made insulting remarks to the attendants and physicians. She imagined much of the time that she was travelling on a train or steamer. She remained in this half-maniacal condition until April, 1902, when she had a very severe cold and complained of much pain in her head. She was quite drowsy.

Following this she had very severe headaches with much vomiting, and in consequence lost 20 pounds. After a few weeks she was somewhat improved physically but mentally much worse, being more confused, restless, and talkative. Shortly after this she became quite delirious and remained so for a week, and later had a remission and seemed in about the condition she was on her admission.

In July, 1902, she became suddenly ill again. She vomited much and was unable to retain liquids at all, but could retain solid food to some extent. She again complained of great pain in her head and eyes, and continued to get worse until, in November, 1902, she was in a critical condition. Her pulse was very weak and irregular. She was very stuporous and could not be aroused. Pupils were unequal. She was constantly wet, not being able to retain urine at all. Bowels were constipated.

When she came out of the stupor and improved a little physically, she was very silly. Talked "baby talk"; mistook the identity of everybody, although occasionally she would address them by their correct names. She began to complain of queer sensations in her chest and knees. She said they felt cold and heavy, but there was no paralysis at that time.

She was able to be out of bed in December, 1902, but at this time she was unable to walk or lift her legs at all. She did not complain of pain in her legs but there was a "feeling of numbness" and she had areas of anæsthesia on the outer side of both legs. The knee-jerks were abolished.

In June, 1903, she was still unable to walk and there was considerable atrophy of the calf muscles. Mentally she was quite silly and childish, sometimes noisy, talking incessantly about events in her past life, some of which were real, but mostly fabrications; for instance, when asked where she was, she said: "This is the State House in Buffalo and Cleveland—the Half-Way House, they call it. When we made the Pan-American, it brought the two cities together—in art and in every way. My father is living out West; has several villas. They are up from the valleys and so they are villas."

She could not tell the day. Says: "I am well taken care of. What do I care what day of the month it is?"

To questions, she will elaborate at great length about her child-

hood and youth, romancing about her having been an actress and that she is constantly travelling, imagining that she is on a steamer or taking part in all sorts of theatrical productions, etc.

She shows marked memory defect and cannot remember a number from one day to another, and when this is given her as a test she attempts to deceive the physician by scratching the number in the varnish of the wood-work so that she can refer to it when asked again.

At present she is able to walk a short distance, and shows no sensory disturbance. The knee-jerks are still abolished and there is a slight tenderness in the calf muscles.

The appearance of neuritis so long after admission to hospital is worthy of note.

In order to have a symptom complex assigned to the dignity of a disease entity, there are certain conditions which it seems should be met. First, there should be a fairly definite and constant etiology. Second, there should be a reasonably clear, definite, and distinct clinical picture, which does not (more than is usual in medicine), overlap or appear in other disease conditions. Third, the pathological findings should be fairly consistent, characteristic, and distinct. As to the etiology, a study of the cases, it seems to me, indicates that the condition is clearly a toxic one, of which poisons alcohol is by all odds the most constant and frequent. As regards the condition, it also seems that the picture of "Chronic delirium tremens," as it has been called, loss of memory especially for recent events, fabrications of memory, inability to retain impressions, loss of orientation, with evidences of an acute infection, mental confusion, and frequent appearance of polyneuritis, constitute a fairly consistent and distinct picture, though it is admitted that some of these manifestations are also seen in senile and general paralysis. As regards the pathology, I must quote briefly from some of the studies post mortem, made by pathologists. First, I am indebted to Dr. F. Robertson Sims, from whose article entitled "Anatomical Findings in Two Cases of Korsakoff's Symptom-Complex," appearing in the March Journal of Nervous and Mental Diseases (1905), I give the summaries of two cases:

First.—"Slight arteriosclerosis. Hypostatic pneumonia. Fatty

infiltration of the liver. Acute degenerations of many of the peripheral nerves. Axonal reaction in cells of the anterior horns, Clarke's columns, and many cranial nerve nuclei. Degenerations in the posterior columns, direct cerebellar tracts, and the root bundles. Moderate 'acute alteration' of the cortical cells."

Second.—"General arteriosclerosis involving the aorta and coronaries. Fatty degeneration of the heart, liver, and kidneys. Acute bronchitis. Acute degenerations in the peripheral nerves of the lower extremities, and also in the vagi. Axonal reaction in cells of the anterior cornua, in Clarke's columns, some cranial nuclei, and the Betz cells of the cortex.

"Vascular changes in the cord and cortex, with numerous microscopical hemorrhages throughout the cerebrum. Acute degeneration of the cortical radiations, and of both motor and sensory systems of the cord, as well as degenerations of the cord not easily reconcilable with the systemic changes."

I would make use also of some of the work of Dr. Cole who has given, in the article on "Brain" before referred to, a detailed account of the findings (post mortem) in three cases—one acute, two chronic. In the two chronic cases fibrosis of tibials is found, vascular changes of nerves, and in one vascular changes in the cord. Changes in the cells of the anterior cornua of the cord, and spinal ganglia; changes in the cells of the posterior cornua, Clarke's columns, in the direct cerebellar tracts, in the cells of the cranial nerves, in the pyramidal tracts, of the Betz cells of the cortex, and in the frontal thalamic fibers. The findings, as will be seen, were much like those in the cases reported by Dr. Sims. The one acute case showed acute degenerations of the nerves, not found in the others, but taking into consideration the difference in duration, the findings were fairly similar. Of course, the number of cases is small, but it is significant that there is such a correspondence in the lesions of these five cases.

In studying the fact that some lesions seem to be found in the peripheral nerves, and some in the central nervous system, Dr. Cole recognizes the difficulty of reconciling these differences, except on the theory that it is an entire neurone with its cells and fibers which are affected, and that in peripheral cases the disease, while a general one, may be manifested in the periphery of the nerve; as in arteriosclerosis senile gangrene may be a manifes-

tation of the disease far removed from the centers of circulation, without evident changes between. The possibility of sites of selection on the part of toxins is also pointed out, and reference is made to such selective action as in the case of diphtheria where the poison seems to be manifest in the nerves presiding over deglutition and respiration, and in lead poisoning where the toxine seems to be by preference manifested in the nerves supplying the extensors of the wrists, and in alcohol where the poison, if manifested in a peripheral neuritis, is usually seen in wrist- and foot-drop. Also pointing out that the previous view, that alcoholic neuritis consists in an inflammatory infection of the nerves only, is now rarely held. That it consists in a degeneration of the nerve fibers in spite of complete, or nearly complete, absence of changes of the sheathes, connective tissues and vessels. That, in fact, there are fewer vascular interstitial changes, the more severe the changes in degeneration, thus showing that they cannot be the causes of the fiber degeneration. In other words, that fiber degeneration is the primary element of the neuritic process.

In an article by Dr. Turner, in the Journal of Mental Science, he quotes Chotzin as saying that women are more susceptible than men, and that the recovery ratio is as one to thirty-eight in both sexes. Soukenhoff and Boutenko found that in one hundred and ninety-two cases collected, one hundred and twelve were in men, and eighty in women, and that about seventy-five per cent were alcoholic in origin. In nine per cent, only, was multiple neuritis absent in the men. In about half of those not dying, mental defects persisted. Complete recovery was put down as occurring in about two per cent. In another series, fourteen women out of seventy-six recovered, or eighteen per cent, and twenty-one died, the rest showing more or less defect, and dementia persisting. Eleven out of fourteen recoveries were alcoholic cases. Of Turner's twelve cases, an analysis indicates that four recovered; three were discharged recovered, but with some memory defect; three were not considered recovered but persisted with more or less marked mental defect, and two died.

Our experience inclines us to believe that the low percentage (two) of recoveries given by some is, or will be found in a study of a larger number of cases, entirely too low, and that we may feel encouraged to hope for a favorable outcome in suitable cases.

Whether a disease entity or not, I believe the picture is a more or less clearly cut and recognizable one to those engaged in the actual practice of psychiatry, and my experience leads me to believe that in this, as in many other diseases, an encouraging measure of success is obtainable by persistent, constant, and intelligent care and treatment.

DISCUSSION.

DR. H. W. MILLER. Mr. President.—I wish to express my appreciation of Dr. Hurd's very timely and instructive article. We all understand how difficult it is for a busy superintendent who is overburdened with executive duties to prepare such a presentation as he has given us to-day.

I think this is an extremely interesting psychosis or symptom-complex. Whether it is a psychosis or whether it is a symptom-complex is debatable, but every careful clinician cannot fail to observe certain characteristic symptoms which strongly suggest a distinct clinical entity. Although it may be somewhat similar to senile dementia, as has been suggested, I do not think an acute observer would often be led astray. The ætiological factors, the characteristic disorientation, the memory disorder, the Merkfähigkeit defect, the romancing, etc., with the frequent association of neuritic disturbance, make to my mind an impressive picture.

I think it is well to be a little cautious, and I would rather prefer to apply the name Korsakoff's syndrome or Korsakoff's symptom-complex, because in outlining and designating a clinical entity we have to take into consideration the ætiology, the course, the outcome, and the pathologico-anatomical changes.

Considering the ætiological factors of these cases we find that excessive alcoholism is predominant in the majority. In some cases it is morphine, in some tuberculosis; in one of my cases it was a post-typhoid condition. Thus we find in the great majority of the cases a toxin either formed without or produced within the organism, or we have the combination of both. We perhaps unfortunately, find this symptom-complex produced by brain injury, which fact Kalberlah recently reported in an article (Korsakoff's symptom-complex after brain concussion). He also carefully reviewed the literature on this subject.

Of the pathological changes in this condition there is considerable discussion. It is claimed by some that there is always what is known as central neuritis with the concomitant changes. Again we find nothing but the axonal reaction in the spinal cord without significant changes in the cortex.

The close association with polioencephalitis superior hemorrhagica, in so far as anatomical changes are concerned and even from a symptomological standpoint has led many to consider it part of the same process. Thus we find certain differences of opinion as to the pathological changes.

Now considering the course and outcome, the majority and the consensus of opinion is that the condition leads to an irreparable mental

defect, which in some cases is very slight. Dr. Hurd is rather more hopeful of it than I am with my limited experience. I cannot recall a permanent recovery in any of my cases.

Now we may ask the question, are all these apparent discrepancies sufficient to invalidate our conception of this process as a disease? Is it not possible that there is a common cause underlying the whole disease, and can this common cause produce all the symptoms and the anatomical changes which have been described? It is to be hoped that future study will elucidate these apparent discrepancies.

Bonhoeffer calls the condition chronic alcoholic delirium, but he does admit that it may be caused by other toxins than alcohol. Korsakoff gives a whole series of ætiologies, but there is no doubt that alcohol is by far the most important ætiological factor. We see it is present in every case of Dr. Hurd's but one. Of the four cases which I reported, three were alcoholic, and of the six cases which I have had in my service since that report, every one was alcoholic. I might add that of my reported cases two are still in the hospital and show practically no change; one has gone home and is earning a living, but could not, even for statistical purposes, be considered a recovery. He is emotional and has a very defective memory.

The question of association with peripheral neuritis has been well discussed by Dr. Hurd, and I do not consider that it is of fundamental importance whether the toxic effect is concentrated upon the peripheral or upon the central neurones, or upon both.

I came prepared to discuss the pathology of the disease, but I find that my time is up, so I will not further burden you. I wish again to thank Dr. Hurd for his very interesting reports.

A CASE OF VISUAL HALLUCINATIONS AND CROSSED AMBLYOPIA WITH VASCULAR AND DEGENERATIVE LESIONS IN THE CALCARINE CORTEX AND OTHER PORTIONS OF THE OCCIPITAL LOBE; ALSO WITH ATROPHY OF THE PREGENICULÆ AND OPTIC TRACTS.[1]

(From the Laboratory of Neuropathology The University of Pennsylvania.)

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AND

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The case briefly recorded below is of much interest from several points of view. It throws some light upon the question of the organic basis of visual hallucinations, and affords some valuable data regarding the pathological anatomy of the insanity of arterio capillary sclerosis. It also furnishes an illustration of a somewhat irregular form of crossed amblyopia, apparently due to lesion of the occipital cortex and subcortex.

The patient, a woman sixty-three years old, had suffered with impairment of vision in both eyes for nearly two years before coming under observation. This dimness of sight was attributed to glaucoma, for which a double iridectomy was performed. After this operation her vision was good in the left eye, but only fair in the right eye. She was not, however, blind in either eye and was able to do considerable near work, although she was careful in this respect. The following is a brief record of the state of her vision and of her fields shortly after the iridectomies, for which we are indebted to Dr. Geo. C. Harlan under whose care she was at that time and by whom the operations were performed.

At this time the vision in the right eye was 20/40 and the

[1] Read at a meeting of the American Medico-Psychological Association, San Antonio, Texas, April 18-21, 1905.

field practically normal with a slight peripheral cut in the temporal side; the disc was cupped, 1.50 D; vision in the left eye was 20/50; the field and the ophthalmoscopic examinations were the same as in the other eye.

In September, 1904, one of us (Dr. Mills) was called to Virginia to see this patient. A few days before she was seen she had had a cerebral seizure in which the right eye became totally blind and vision in the left eye was greatly impaired. Examination showed this complete loss of vision in the right eye, and so great a contraction of the fields of the left eye as to give the case the appearance of one of so-called barrel vision. At the time of her attack she lost the power of coordinating her movements sufficiently to stand and she was slightly delirious. She was mildly excitable, talking rapidly and somewhat inconsequentially. The members of her family regarded her as simply excited over her loss of sight and inability to stand, but her condition was one suggestive of hypomania. From the first it seemed that active mental disorder was imminent.

After a few days she was brought to Philadelphia where she was attended until her death by Dr. Harlan and Dr. Mills. Shortly after her arrival Dr. Harlan made a careful examination of her eyes. In the right eye she had scarcely more than light perception. The fundus was the same as in the previously reported examination, except that the cupped nerve had filled up to the level of the retina which equalled a swelling of plus 1.50; tension was normal. In the left eye vision was reduced to 5/40. The field was peripherally contracted to 40 degrees on the mesal side and to 20 degrees on the temporal side. The color proportion of the field was normal. The disc was slightly cupped, the fundus was otherwise normal.

On account of the patient's nervous condition it was not considered wise to make a minute outline of the fields.

Early in the history of this case there was something hard to describe in her mental state and attitude. She talked and acted as one somewhat emotionally exalted and lacking in inhibition. As she had not at first any hallucinations or illusions, some of those around her were inclined to regard her as not suffering from any mental unbalance, she normally being vivacious and inclined, on slight cause, to excitement. At first she was not able to stand or walk, but in the course of ten days she became able to walk

without support for a few feet. How far her inability was mental and how far physical, it was difficult to say, as under strong encouragement she stood and walked better.

Two weeks after arriving in Philadelphia she suddenly became violently delirious during the night, talking and screaming and showing signs of visual hallucinations. She leaped from the bed and became difficult to manage. From this time on until a few days before her death, when she became quieter through weakness, she was acutely maniacal.

A record of a few of her hallucinations will be of interest. Four days after she had given clear evidences of the existence of acute mania, she saw men in the room with knives and pistols assaulting her son and husband as well as herself; she said that her own life was in danger but she did not care for that if only her son and husband were saved. At about this time she also saw fire occasionally, but she still continued to recognize those around her, and talked with them more or less rationally. She also now and then spoke of some dead relatives. Up to this period she had shown no fever, although her temperature had occasionally arisen to 99 or even to 100 degrees.

About one month after coming under continuous observation she developed a glandular swelling on the under right side of the face which disappeared in a few days. She died about three months after coming under care in Philadelphia. During most of this time illusions and hallucinations of sight were the most marked features of the case. She would, for example, suddenly cry out that she saw persons or objects threatening her or passing before her. She sometimes mistook the nurse or the doctor for someone with evil designs against her. With an effort her attention could be temporarily fixed, but she would suddenly cry out with great fear, pointing in the direction of some imaginary person or object. The hallucinations and illusions of sight kept up until a state of thorough exhaustion came on a few days before her death. They were not associated with hallucinations of sound, and there was no involvement of other senses unless the statements which she made at one time early after the development of visual hallucinations, that her legs were being or had been cut off, might be so considered.

Examinations of her urine were frequently made and on one or two occasions showed a few casts and on one or two others a

trace of albumin; otherwise there was nothing of special importance. The blood examination made about ten weeks before her death showed: red cells 4,280,000; white cells 8700; hemoglobin 85 per cent.

Her mental condition grew steadily worse as shown by incoherence mingled with wild hallucinations and illusions, chiefly of terror, and steady mental reduction. A week or two before her death the optic discs, which were cupped, began to present the appearance of an optic neuritis, but this did not fully develop. About this time her evacuations became involuntary. Later she became stuporous and developed Cheyne-Stokes breathing. She died of all the evidences of cerebral and general physical exhaustion.

Dr. Cadbury, one of the internes at the Pennsylvania Hospital, has kindly furnished notes of the case.

The necropsy was performed by Dr. Geo. S. Crampton, one of the resident physicians to the Pennsylvania Hospital. The results of the gross examination summarized were, chronic interstitial nephritis; chronic mitral and aortic endocarditis; acute vegetative aortic endocarditis; cardiac hypertrophy with fatty degeneration of the myocardium; congestion of the lungs with acute bronchopneumonia; fatty degeneration of the liver, and a high degree of atheroma of the vessels at the base of the brain. The brain was sent to the laboratory of neuropathology of the University of Pennsylvania where it was examined both macroscopically and microscopically by Dr. C. D. Camp under the supervision of Dr. Wm. G. Spiller, professor of neuropathology.

Further macroscopical examination of the brain showed the convexity and other regions of the brain apparently normal. The arteries at the base, as already stated, were intensely sclerotic. The pregeniculæ were much atrophied on both sides. No areas of softening were found in the thalamus, other basal ganglia, optic radiations, or in any part of the cerebrum.

After hardening in ten per cent formalin solution, pieces of tissue from various parts were examined histologically with the following results:

The preparacentral regions on each side were normal by the hematoxylin, acid-fuchsin, and Weigert-hematoxylin methods, though the blood vessels here as elsewhere in the cortex, were slightly thickened and the perivascular spaces enlarged. There

was no round cell infiltration of the pia or about the blood-vessels. The Betz cells, studied by the thionin modification of the Nissl method, were intensely pigmented, occasionally almost filled with pigment. The tigroid substance appeared to be normal, except where it was invaded with the pigment. The contour of the cell was preserved, but the dendritic processes of many of the cells were indistinct.

Sections from the cortex of various parts of each hemisphere, selected with a view to their functions, such as the posterior paracentral convolutions, the midprecentral opposite the second frontal convolution, the frontal poles, the quadrate lobules and angular gyres were found to be normal by the acid-hematoxylin, acid-fuchsin, the Nissl, and Weigert-hematoxylin methods.

In sections from the calcarine fissure from each side was seen to be an intense congestion, with the formation of numerous very fine new capillaries. They were mostly in the second and third layers of the cortex, and the pyramidal cells in their vicinity appeared degenerated on examination by the Nissl method. Sections from the cortex of the lateral surface of each occipital lobe, near the occipital pole, showed areas not involving the whole section of a similar vascular appearance, as in the calcarine fissure, and probably a part of the same pathological process. The nerve cells in the location of these areas were of the pyramidal variety, but they had lost their normal shape and structure completely. The white substance beneath these areas appeared degenerated by the Weigert-hematoxylin method, and full of small holes as though nerve fibers had dropped out.

Sections from the white matter in the interior of the frontal lobes appeared perfectly normal by the Weigert-hematoxylin method, but sections of the white matter from the interior of the occipital lobes did not stain so well.

Sections from the oblongata appeared normal by the acid-hematoxylin, acid-fuchsin, and the Weigert-hematoxylin methods. The cells of the nuclei of the hypoglossal nerves appeared normal on examination by the Nissl method of staining.

The left optic nerve was about one-third of the normal size of an optic nerve, and surrounded by a greatly thickened sheath. There was much connective tissue overgrowth between the nerve bundles, which were small and degenerated.

The chiasm appeared to be degenerated by the Weigert-hematoxylin method, but there was no round cell infiltration about it.

It is most interesting to note in connection with this case that the patient was a sister of a lady, the record of whose case was presented to the Medico-Psychological Association in 1897; and also in a fuller report, to the Section on Neurology and Medical Jurisprudence of the American Medical Association in 1898.[3]

In this case the patient was a woman sixty-four years old at the time of her death. At a comparatively early period after the birth of one of her children she had an attack of mania from which she recovered. She had also suffered from chorea during adult life, and when about thirty-five yeare of age began to show some signs of mental change and peculiarity which gradually increased. During the third year before her death she became so unreasonable as to make living with her almost impossible. Later she had attacks resembling grippe. She became bed-ridden and was the subject of persecutory delirium or outbreaks of excitement and of hallucinations of various sort.

Her chief symptoms during the last eighteen months of her life were: vertiginous attacks; difficulty in orientating herself; marked amnesia, not only for names, but for recent events. She gradually became feebler mentally, and during the few months preceding death was in a state of decided dementia, with occasional spells of excitement. Her attempts at conversation were childish, and she had numerous transient, unsystematized delusions.

The necropsy in this case showed on gross examination widespread evidences of arterial disease. The vessels at the base were atheromatous; the precommunicans was the seat of an aneurism, and numerous miliary aneurisms were found in the pial vessels in different locations. The dura was thickened and the pia arachnoid somewhat opaque. An extensive and careful microscopical investigation of six different regions of the cortex was made by Dr. Mary A. Schively, who used the thionin, methylene blue, silver phosphomolybdate, hematoxylin and eosin, hematoxylin, picric acid and fuchsin, and also the Weigert-Pal methods of staining. The results were recorded in a condensed but valuable report with

[3] American Journal of Insanity, vol. 56, No. 2, 1897. The Journal of the American Medical Association, No. 15, vol. xxx, April 9, 1898.

numerous illustrations of the pathological appearances found in nerve cells, glia cells, vessels, meninges, and brain substance. One of the most interesting illustrations was a photo-micrograph of a long pyramidal cell from the ascending frontal convolution, showing roughening of the cell corpus and of the apical dendrites; also moniliform swellings of some of the basal dendrites. The pathological features of the case were summarized as internal and external changes in the neuron; changes in the protoplasmic glia cells; changes involving the cortical pial vessels, also the vessels at the base of the brain; multiple areas of softening in the ascending parietal region; and myelin degeneration.

A close scrutiny of the pathological changes found in the brain recorded in the present article will show that the pathology of the two cases was fundamentally the same. In the first case recorded, however, the disease was much more extensive and more advanced as would be expected from the clinical history of the case, the evidences of mental disorder and deterioration having extended over many years, while in the case of this patient's sister, now put on record, active disease had only been present for a year or two at most. In this case, as in the other, the vessels at the base were highly atheromatous. The cortical vessels were everywhere slightly thickened and the perivascular spaces enlarged. The giant pyramidal cells were in some places almost filled with pigment; and the dendrites, although preserved, were often indistinct. The cortex and subcortex examined in various regions as stated in the full report, showed comparatively little disease. The calcarine cortex, however, and other parts of the occipital lobe were the seat of recent vascular and less recent degenerative changes. The intense congestion and the formation of new capillaries were pathological findings of particular interest in connection with the conditions of excitement and the striking visual hallucinations shown by the patient. The degenerative changes in the pyramidal cells were similar to those found by Dr. Schively in widespread areas in the other case. The pyramidal cells in both cases had lost their normal shape and structure and the adjacent white substance was degenerated. Whether the very marked atrophy of the left optic nerve and the accompanying changes were primary or secondary it is difficult to say. In any case it is probable that the visual hallucinations present were due to the cortical and subcortical vascular alterations.

The case reported in this paper and the one placed on record in the Proceedings of the Association in 1897, in addition to other points of interest, constitute valuable contributions to the symptomatology and pathological anatomy of the insanity of arterio-sclerosis. The vessel changes of arterio-sclerotic insanity as recorded by others are, thickened and much altered walls; dilated or occluded lumina; and aneurisms, both miliary and macroscopic. In connection with the intense congestion and formation of new capillaries recorded in our case, it is interesting to note that other cases with similar changes, including capillary hemorrhages, have been recorded. Advanced intracellular, endritic, and neurogliar changes were also present in our case as in others. It is also worthy of note that in the case here first recorded arterio-sclerotic changes were found in other organs as in the kidneys, heart, and liver.

Whether the complete blindness in one eye and the serious loss of vision in the other were to be regarded as constituting a genuine case of crossed amblyopia such as has been reported by Ferrier and Gowers, and attributed to lesion of the angulo-occipital region or of the macular bundle may perhaps be regarded as doubtful. If due to the lesions undoubtedly present in the calcarine cortex, this crossed amblyopia is of much interest in connection with the question of the existence of a separate macular representation in the primary or lower cortical visual centers of the calcarine region and in the higher angulo-occipital visual areas.

Dr. Harlan agreed that the final amblyopia in this case could not be attributed to the preceding glaucoma, at least not to the peripheral conditions which were present. With the exception of the cupped nerves, the fundus of each eye was normal and the filling up of the nerve cup seemed to indicate the occurrence of some intracranial lesion. The attacks of sudden loss of vision which occur in chronic glaucoma may, in some instances be due to intracranial lesions affecting the cerebral, and especially the macular, bundles or centers. It is possible of course that the atrophy of the left optic nerve and tract may have accounted for the great loss of acuity of vision and contraction of the visual field in the left eye, but in any case the sudden amblyopia in the right eye was doubtless due to a sudden vascular lesion in the left hemisphere.

CYTODIAGNOSIS IN PSYCHIATRY.[1]

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It was only five years ago, in the summer of 1900, that WIDAL and his pupil RAVAUT were making public in Paris their firse results with a new diagnostic measure in paresis, namely, the cytologic examination of the cerebro-spinal fluid *intra vitam.* This procedure, although young in years, has nevertheless, through the zeal with which it has been tested and the enormous amount of work which it has called forth in all countries, acquired a considerable degree of venerability.

Cytodiagnosis, the name applied by WIDAL and RAVAUT to the examination of the cellular elements suspended in the fluid of any serous cavity, has now come to be almost exclusively referred to the examination of the cerebro-spinal fluid, by reason of the widespread application of the method to the study of the liquid obtained by lumbar puncture, in the various mental and nervous diseases. It has, moreover, become associated with other important means of examination, physical, chemical, and bacteriologic, which, taken together, have placed the operation of lumbar puncture in a secure place in our diagnostic armamentarium.

The operation itself, lumbar puncture, was introduced by QUINCKE in 1891, not as a diagnostic but as a therapeutic measure, for relieving pressure symptoms in meningitis, and this is at present practically the only therapeutic indication for the operation, although it has been tried in the most diverse conditions, and with varying results, sometimes apparently beneficial, sometimes indifferent, sometimes directly injurious—even fatal. Aside from its use in the meningitides, lumbar puncture has been done to relieve symptoms in cases of cerebral abscess, of Huntingdon's chorea, even of brain tumor, although the untoward accidents which have often followed the operation in this latter condition indicate the necessity of the utmost consideration before attempting it in possible tumor cases. Further, epileptic attacks have

[1] Presented before the Medical and Chirurgical Faculty of Maryland, Baltimore, April 27, 1905.

been reported diminished in frequency, and the crises and pains of tabes alleviated, following lumbar puncture. BABINSKY has seen favorable results after operation in cases of disturbance of hearing with increased intracranial pressure, and MARIE reports the persistent headache of secondary lues relieved after the withdrawal of cerebro-spinal fluid. VIGOUROUX saw some improvement in the hallucinatory delirium of Bright's disease. A very remarkable result is reported by MOTY in a case of katatonic stupor following scarletina in a soldier aged 19. *After* two punctures, at each of which 5 cc. of fluid were removed, the patient entirely recovered (!). MEHLER, in a case of chronic hydrocephalus, abstracted 300 cc. at two sittings, leaving the canula in place till no more fluid escaped. He reported good results (!).

While in some cases symptoms have apparently been favorably influenced by the operation, these results are by no means constant, and lumbar puncture, as a remedial agent, has decidedly not confirmed the hopes which have been entertained for it. From this point of view its use has therefore become more and more restricted, while on the other hand, its value as a means of diagnosis has received correspondingly increasing recognition.

Before the studies of the French school, LICHTHEIM had pointed out the importance of observing the physical and chemical reactions of the cerebro-spinal fluid, and was indeed the first to note in tubercular meningitis an abnormal coagulability due to the presence of fibrin in considerable amount. Bacteriologic studies soon followed; the bacillus tuberculosis, the diplococcus of WEICHSELBAUM, the pneumococcus, the strepto- and staphylococcus have been repeatedly demonstrated, each carrying with them evidence as to the nature of the infection. Regarding the pressure of the fluid, no constant pathologic variations have yet been established, if we except the findings in epilepsy, which show during the seizure a rapid initial rise in pressure till the tonic stage is reached, after which there is a fall with irregular variations. In repeated attacks the pressure has been found to sink almost to zero (ORMEA, SKOCZYŃSKI).

It is not the purpose of the present discussion to deal with the physical or bacteriologic characters of the spinal fluid. A few points in its chemistry must, however, be mentioned. The fluid

is a secretory product, of definite chemical constitution, and believed to owe its origin to the activity of the choroid plexus. It is normally alkaline, and contains, beside water, a certain percentage of chlorides, a small amount of serum globulin, a trace of cholin as a normal katabolic product, and a reducing substance probably sugar.

Under pathologic conditions three important quantitative variations have already been established, namely, an increase in (1) proteids, (2) sugar, (3) cholin.

(1) *Proteids.*—It was at first believed that the normal liquid contained traces of serum albumen, and that this was increased pathologically. The work of ARTHUS (1900), WOLF (1901), GUILLAIN and PARANT (1903) showed, however, that in the healthy fluid the reaction was due to the presence of serum globulin, after the removal of which by means of magnesium sulphate, no further coagulation took place on boiling. SICARD, in his work, "Le Liquide céphalo-rachidien," also states that normally the fluid contains traces of serum globulin but no albumin. If one follows the technique described by GUILLAIN and PARANT, removing the globulin by adding to the liquid an equal amount of a saturated solution of magnesium sulphate, and filtering, it may be taken as a general rule that a normal fluid thus treated should remain clear when boiled. If, however, the magnesium sulphate be replaced by ammonium sulphate, as suggested by COHNHEIM, the test becomes more delicate, smaller traces of albumen are revealed in pathologic fluids after precipitation of the serum globulin, and minute quantities of albumin are even demonstrable in assumably normal cases, as NISSL has shown. MERZBACHER also found traces of albumin in normal liquid. Pathologically, both globulin and albumin are present in increased amounts. The latter, which is practically a negligible quantity in normal conditions, is increased in appreciable amount in various meningo-encephalitides, and is present often in marked excess in the cognate diseases, tabes and paresis. In the latter condition above all others, is the presence of an excess of albumin characteristic, and it is frequently demonstrable as a very early indication. GUILLAIN and PARANT found albumin in 16 cases of paresis, while it was absent in 20 cases with other psychoses. NISSL observed a constant reaction in 17 paretics, and found no

albumin in 41 non-paretic cases, except those with meningitis or with history of lues. The presence of albumin is commonly associated with a positive cytologic reaction (lymphocytosis), but does not depend upon it. The two conditions may indeed be observed independently. In NISSL's cases the albumin reaction was the more constant of the two.

(2) *Sugar.*—While present in small amounts in normal fluid, pathologic variations in the quantity of sugar in diseases of the nervous system, comparable to those in the proteids, have not been found. In diabetes mellitus, SICARD, WIDAL, RAYMOND observed an increase of sugar in the spinal fluid, parallel with the increase in the urine, the amount diminishing in both fluids under treatment, the reduction going hand in hand with an amelioration of subjective symptoms. This coincidence led to the suggestion of the possibility of a direct action upon the nervous tissue of the glucose contained in the cerebro-spinal fluid. A recent interesting finding of DÉROUBAIS may be mentioned in passing. This author obtained a constant sugar reaction with normal fluid, but was able to get no reduction of Fehling's solution in a number of cases of that protean malady, dementia präcox, which he had the opportunity to examine. Whether this be a point of diagnostic importance further observations will be required to determine.

(3) *Cholin.*—This body is a product of the splitting of lecithin and exists in the spinal fluid as a result of the breaking down of myelinated nerve fibers. It is increased therefore in any condition associated with considerable degeneration of nervous tissue. MOTT and HALLIBURTON were the first to demonstrate the presence of cholin both in the blood and spinal fluid in cases of paresis, and it has naturally been found most frequently and in greatest abundance in this disease, which of all the affections of the nervous system represents the most profound regressive changes in the nervous parenchyma. Cholin is not found in paresis alone, however. As has been said, it may be shown to exist in normal liquid, and has been isolated by lumbar puncture from animals. It is increased in cases of tabes, epilepsy, multiple sclerosis, cerebral tumor, in various forms of encephalitis and meningo-encephalitis,—in short, in any pathologic state which is marked by extensive breakdown of nerve tissue,—of all diseases, paresis being placed foremost.

The foregoing are the more important pathologic alterations hitherto established in the chemistry of the cerebro-spinal fluid.

We come now to the cellular findings, the determination of which constitutes cytodiagnosis proper. Under normal circumstances the liquid is crystal clear and contains no formed elements,—at most a lymphocyte or two in one immersion field. In dementia paralytica, which of all brain disease offers the widest departures from normal, not only from the chemical but also from the cytologic point of view, a greater or less degree of lymphocytosis in the spinal fluid is the rule. According to RAVAUT a normal fluid may contain from none to three lymphocytes in a single field, any number above three indicating a pathologic condition. For convenience of classification, RAVAUT describes three grades of reaction according to the number of lymphocytes present:

(a) Slight reaction = 4 to 6 lymphocytes in one field.

(b) Moderate reaction = 7 to 20 lymphocytes in one field.

(c) Intense reaction = 20 or more lymphocytes in one field.

Indeed, the lymphocytes are sometimes so numerous that counting is difficult or impossible, and the microscopic field may appear, as DUPRÉ has picturesquely said, like "*une cible criblée par une décharge de petits plombs de chasse.*"

Where many lymphocytes are present, a few leucocytes may also be found among them; rarely they have been reported in excess, but as a rule they occupy an insignificant place in comparison with the lymphocytes.

In paresis therefore—and the same is true of tabes—spinal lymphocytosis is the rule. The reaction indicates a subacute or chronic process, just as leucocytosis,—the presence in excess of polymorphonuclear leucocytes, or polynucleosis, as it is often called,—is an indication of an acute process. The difference is well shown in the various forms of meningitis. Thus, in an acute meningitis, for example, the epidemic form, spinal polynucleosis is regularly observed, while in chronic conditions, such as tubercular or luetic meningitis and meningomyelitis, lymphocytosis is the rule. An interesting observation of WOLF in Paris, in acute cerebro-spinal meningitis, further illustrates what has just been said. WOLF found that at the onset of the disease the spinal fluid contained leucocytes, indicative of the freshness of

the process. Later these gradually gave place to lymphocytes, which change was taken as a favorable sign, and was indeed accompanied by improvement. At this stage three possibilities were open: (1) The lymphocytes might gradually disappear with the further clearing up of the disease; (2) they might persist for an indefinite period, indicating the passage of the process into a subacute or chronic one; (3) leucocytes might again mingle with or replace the lymphocytes, in association with a recrudescence of the inflammatory process. An acute condition is therefore characterized by the presence of polynuclear leucocytes; a chronic condition by the presence of lymphocytes.

Strictly, in the presence of an undoubted spinal lymphocytosis, the first thought should be of lues—pre-eminently the paraluetic affections—and first and foremost dementia paralytica. Conversely, at the first nervous symptom in a patient known to be luetic, RAVAUT insists that lumbar puncture be done, for the purpose of determining whether or not the central organs or their envelopes are involved.

In paresis and tabes lymphocytosis may be present at all stages. It is particularly constant during the initial period, and may be observed late in the terminal stage. BRISSAUD and BRUANDET, in a series of tabetics, found a constant lymphocytosis and in cases of varying duration up to twenty years. MARIE and CROUZON examined twenty patients with tabes and reported a moderate or marked reaction in all but one case, which also presented a slight lymphocytosis. They were able to determine no relation between the intensity of the lymphocytosis and the form or severity of the clinical symptoms. JOFFROY has particularly pointed out the value of cytodiagnosis in the early stages of paresis, lymphocytosis being, in his opinion, the earliest and most constant somatic symptom of that disease.

Spinal lymphocytosis is simply the expression of a *subacute or chronic cerebro-spinal periarteritis and pia-arachnitis*, and in its intensity doubtless stands in some relation to the degree of infiltration of the membranes and of the adventitial sheaths of the blood-vessels in the central tissue itself. This adventitial infiltrate in paresis, consisting of lymphocytes and plasma cells, may show, as is well known, the widest variations, at times subsiding or almost disappearing. In the same manner the elements in the

cerebro-spinal fluid may be present at different times in greatly varying numbers—on occasion even practically disappearing. This fact shows the necessity of repeating the puncture, after a sufficient interval,[2] if the first examination fails to yield a positive cytologic reaction in a suspected case. As has been said, albumin is usually present in association with the lymphocytosis, but not always, and does not depend upon it, albumin being sometimes pathologically demonstrable when no cells are to be found.

The principal diseases of the nervous system in which white blood cells occur in the spinal fluid may be summarized thus:

Leucocytosis.—Acute congestive or inflammatory processes in the meninges; epidemic cerebro-spinal meningitis; brain abscess.

Lymphocytosis.[3]—Dementia paralytica; tabes dorsalis; cerebro-spinal lues, including luetic meningitis, myelitis, and meningo-myelitis; tubercular meningitis.

In cytodiagnosis we possess a method of examination which often clears up early and positively difficulties in differential diagnosis, which without it, might long persist, to the embarrassment of the clinician and the annoyance of the patient's friends. In cases where the so-named functional psychoses, hysteriform, and neurasthenic states, alcoholic insanities, involutional forms, degenerative types, choreic insanity, the maniaco-depressive and dementia præcox groups come into consideration as differential possibilities, lumbar puncture may yield the most valuable evidence, the conditions named furnishing regularly a negative cytologic reaction. On the other hand, practically every case with Argyll-Robertson pupil presents also a spinal lymphocytosis, the reaction being most constant and most marked in paresis.

In addition to the cases in which the clinical evidence has not seemed sufficient to warrant an early diagnosis of tabes or paresis, and in which lumbar puncture has decided the question, other obscure forms have occasionally been cleared up by this means,

[2] To allow the subsiding of a possible slight reaction due to the irritation of the meninges produced by the needle, ten days should be allowed to elapse before a second tapping is undertaken.

[3] Lymphocytosis has also been observed in cases of herpes zoster, epidemic parotitis, and sciatica. In epilepsy various observers have regularly reported negative results. MERZBACHER, in twelve cases from the Freiburg clinic reported a moderate reaction in 6, and a slight reaction in 2, negative in 4.

unsuspected conditions revealed, false diagnoses corrected. DUPRE mentions among seven tabetics, all of which showed lymphocytosis, one patient who applied for treatment for persistent diarrhœa, and whose only other symptoms were myosis and loss of the achilles reflex. Lumbar puncture confirmed the diagnosis of tabes. MILIAN refers to the value of cytodiagnosis as a means of distinguishing between headache of specific origin, and that otherwise conditioned. CHAUFFARD and BOIDIN, in several cases of acute infection with marked irritative meningeal symptoms (meningism), demonstrated by means of lumbar puncture the non-involvement of the meninges. Cases of focal hæmorrhage and areas of softening have been recognized by the presence in the spinal fluid of the so-called granule cells, better described as *reticulated cells,* the phagocytic elements which early make their appearance in a necrotic focus in the central organs. These cells may be found laden with erythrocytes or drops of myelin. In one case of focal necrosis observed by SABRAZES, MURATET, BONNES, a nerve cell, escaped from the breaking-down tissue, had floated out into the cerebro-spinal fluid, and was recovered in the test-tube by lumbar puncture. Another case, cerebral cysticercus, was diagnosed by the occurrence of the organism in the fluid (HARTMANN).

The technique of lumbar puncture for cytodiagnostic purposes, as taught by the French school and followed by the majority of observers, is too well known to require mention. The method has one cardinal defect. It should be possible to study under the microscope the formed elements in the fluid just as in the case of a blood specimen taken *intra vitam.* Centrifugation makes this impossible, for during the process the elements become deformed and otherwise altered post mortem, and may lose to a greater or less degree their tinctorial capacity. While therefore the cells can be counted and the distinction made between leucocytes and lymphocytes, a satisfactory differential estimation is quite out of the question. The method of best promise for obviating this difficulty is that by which the newly-drawn uncentrifugalised fluid is used. For simple counts ROSENTHAL diluted the fresh fluid one-tenth with a solution of methyl-violet in a Zeiss mélangeur, and enumerated the cells by means of the counting-chamber. In this way he found in fifteen luetic and metaluetic cases an average

of 60 elements per cubic millimeter, while in fifteen normal and functional cases the average number of cells was 0.5 to 2. Accurate differential counts of the elements in the spinal fluid have yet to be undertaken. They must also be made with uncentrifugalised liquid, and will perhaps throw light upon the relation between these elements suspended in the fluid and those which make up the advential exudate in the central tissue itself.

In addition to the *intra vitam* method, lumbar puncture has a certain diagnostic value as a part of the post mortem examination. Post mortem evidence would, however, depend solely upon the study of the cellular elements contained in the fluid; chemical tests would obviously be untrustworthy. From the cytologic point of view GIANNUZZI reported practically the same results in the examination of the spinal fluid in the cadaver not later than twenty-four hours after death, with the same diagnostic differences, as he obtained during life.

It remains but to mention two or three points concerning the necessary precautions accompanying the operation, its possible consequences and contraindications. In the first place, the operation of withdrawing fluid from the cerebro-spinal canal is by no means an entirely indifferent and innocent procedure, but may be followed by symptoms more or less distressing or alarming, dependent upon the condition of the subject, the technique of operation, and other circumstances. These unpleasant after-possibilities have been disregarded by many authors, notably the French, or have been dismissed with the remark that transitory headache or nausea and vomiting had been observed. Only recently, especially in Germany, following the studies of NISSL in the Heidelberg clinic,[4] has this side of the question come to receive more attention. Headache of a severe type, nausea and vomiting, persistent backache and nuchaeal pain, utter lassitude, mental hebetude, are common enough after the ambulatory form of operation which cannot be too severely condemned. These symptoms may confine the patient to his bed for days or even weeks,

[4] To DEVAUX is due the credit of having stimulated interest in the cytologic study of the spinal fluid in Germany. He introduced the technique of WIDAL at Heidelberg (v. Centralblatt für Nervenheilkunde und Psychiatrie, XXVI, No. 161), after which appeared the studies of NISSL, SCHONBORN and others.

and to obviate or at least mitigate them, he should be placed in bed immediately after the operation, if not already there, and should be kept in a horizontal position with head low for a number of hours, better for the remainder of the day or until any uncomfortable symptoms have subsided. In NISSL'S series several normal individuals were included. They were chiefly assistants in the clinic or students who volunteered their services. In these cases the subject merely sat down to be tapped, after which he went about his usual occupation. There followed usually a free interval of from three to five hours during which nothing extraordinary was experienced; then came the headache and other symptoms mentioned, which varied greatly in intensity and duration. During their acme the subject was incapable of the slightest effort, being compelled to remain in a horizontal position at physiologic rest. Under such circumstances it was noted that the giddiness, nausea, pains in back, neck, and head, were often remarkably alleviated, but reappeared in full intensity as soon as the attempt was made to sit up or even to raise the head. The duration of this condition varied in the several cases from a few hours to fifteen days.

A second point concerns the amount of fluid to be abstracted. It is scarcely necessary to say that this should be as small as possible. 3 to 5 cubic centimeters suffice for the usual cytologic and chemical tests. The withdrawal of large amounts, and the heroic resource of aspiration when the flow is not ready, are absolutely contraindicated. OSSIPOW showed by experiments on dogs that serious injury to the nervous parenchyma may result from the abstraction of too great an amount of fluid, from aspiration, and from too frequently repeated puncture. A persistent congestion of the vessels follows the operation, which results, if often repeated, in miliary hæmorrhages in cord and brain.

Finally, there are in the literature several reports of cases in which collapse and sudden death followed the operation within a few hours. These were mostly cases of brain tumor, in which the sudden change of pressure in the cerebro-spinal cavity, due to the removal of fluid, and the compensatory vascular congestion, favored hæmorrhage. The operation is therefore, as a rule, contraindicated in cases of tumor, particularly of the cerebellum, and in all cases of high-grade arterio-sclerosis.

EXTENSION OF TENT TREATMENT TO ADDITIONAL CLASSES OF THE INSANE.[1]

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That tent life for the care and treatment of the tuberculous insane, as inaugurated by Dr. A. E. Macdonald, Superintendent of Manhattan State Hospital East, Ward's Island, New York City, has proven eminently beneficial, as shown in the very successful results of "Camp A," there can now be no longer any room for doubt.

That the outdoor tent life has too, a remarkable effect on the demented and uncleanly class is shown also in the awakened mental processes of these unfortunate patients as observed for the last three years in "Camps B and C."

The cases so far mentioned are usually of the most dependent and helpless class. Physically, they are weak, many bedridden—and all require constant nursing and attention. Mentally, their faculties are so enfeebled that they lack all initiative and spontaneity. Their power of attention is limited, their mental content that of the immediate present, their power of association faulty, their retention defective. What concepts they may have are defective, their perceptions obtuse, their ideation a tissue of vague delusions, long of the past, now fading as dementia advances. Their conversation is rambling and incoherent, their deductions fatuous and illogical, their demeanor sullen, apathetic or childishly elated, as the case may be. Many live lives of simple moria.

But another class of patients needs to be accounted for, when considering the effects of outdoor life on the insane. These are the convalescents, those who are on the threshold of the outside world about ready to step back into their accustomed avocations,

[1] Read at the Sixtieth Annual Meeting of the American Medico-Psychological Association, St. Louis, Mo., June, 1904.

and to resume once more an active life. In the "convalescent ward" of every hospital for the insane, they are observed taking an active part in the daily routine, assisting in the ward work, playing games, enjoying their reading matter, clean and neat in dress, and to the casual eye perfectly restored to health. The majority of such patients realize their past alienation and feeling that they have recovered, anxiously ask almost daily for their discharge. This request the physician finds it oftentimes most difficult to refuse, and harder still to frame a reply which will convince the patient that a further residence in the hospital is for his best interest. But the experienced alienist knows but too well that speedy recoveries with a too short period of convalescence very often find their sequel in a speedy readmission with a recrudescence of all the former symptoms exaggerated and the prognosis rendered much more unfavorable.

It must be admitted that many "recoveries" are recoveries from a relative standpoint only, and are relative to more than one standard, from the standpoint of the exact alienist, from the standpoint of the eager statistician, or from the practical standpoint of the patient's visitors, whether relatives or business associates. So many extraneous reasons are there which come into play as pertinent factors in the recovery of the convalescent patient.

A critical examination of the recent convalescent, however, will usually discover several important symptoms both as to his mental and physical condition which, if overlooked or disregarded, may eventually result most disastrously for the patient. There is most often found a condition of slight apprehension, a slight reluctance to take up his former social status, an ill-defined fear that he is not all that he was. The condition may easily be mistaken for very mild depression, but it is not an exactly similar condition. At this stage of convalescence the patient is most subject to a return of impulsive acts and ideation with their characteristic demeanor. Other cases show a too eager desire to return to active life. They fail to realize the seriousness of their past illness and have not a proper conception of their abilities as to the amount of mental and physical labor which they are capable of undertaking. There still remains the type of convalescent who has recovered to all practical intents and purposes, who has no

delusions or hallucinations, but who fails utterly to appreciate his past alienation.

It may be presumed that all these types have been residents of the hospital wards for at least two months, with the consequent restrictions as to outdoor life and exercise inevitable to residence in a hospital ward, no matter how great the efforts toward extending the routine outdoor exercise may be. Especially is this the case if the alienation occurs during the inclement winter months. It will be found that the patients have almost universally gained in weight, but their adipose tissue is apt to be flabby and their general musculature, while normal as to the amount, is deficient in tone as shown by the usual resistance tests. The classical hæmoglobinometers, the lips and conjunctival mucous membranes, show that the blood, usually so impoverished at the time of the patient's admission, has not fully returned to the normal. There is anæmia, which is at times quite persistent, especially where the etiological factors are alcoholism and lues. The eastern, southeastern, and southern hospitals will also have to take the malarial cachexia into this consideration.

The physician sees these slight defects in the patient's physical condition. He is cognizant of the exact mental status, yet the patient is anxious to receive his discharge and the patient's friends are daily and clamorously importuning the hospital authorities for his release, so that the physician must needs decide from either the standpoint of the exact alienist or from the "practical" standpoint whether or not the patient is able to resume active life once more. It is the "psychological" moment, which may make or mar the patient's whole future life. It was for such cases that the old system of parole was devised, but the objection to this system is that the patient comes into immediate and unrestrained contact with undesirable associates and at the same time feels that he is under the irksome quasi-jurisdiction of hospital authority.

It was to remedy these defects in the management of convalescent patients that the new tent system for convalescent patients was inaugurated June 1, 1903, and continued without interruption through the summer and fall to December 1, 1903. Two large wall tents of 12 oz. duck, each 20 x 40 feet, were pitched on a gentle slope having a declivity of approximately 1 to 25, thus affording

most excellent drainage during the periods of wet weather. For the tent floors sectional platforms were constructed which were elevated one foot from the ground, all tall grass and underbrush being cleared away. The camp was sheltered on the western exposure by a high, thick hedge, which also served to conceal the toilet, a wooden structure fitted with running water and the usual toilet appurtenances. The water pipes were connected with the permanent sewer.

In fair, warm weather the entire wall of each tent was raised both day and night. On cooler nights the tent walls were lowered, ample ventilation being afforded by means of the adjustable ventilators at each end of the tents.

To the south of the camp was situated the attendants' tent and at the north end a tent was pitched for use as a storeroom for the camp games and other utensils when not in use.

The prevailing winds during the summer months have been the northeast and southeast winds. For this reason the tent pegs on the east side of the camp were made three feet long, which afforded a firm and solid anchorage for the tent ropes.

Each of the large tents accommodated 22 beds, there being 44 patients in all. During the entire season there was not even an attempt at escape, the patients being grouped around the camp upon settees as soon as dusk set in. Every day the patients enjoyed outdoor exercise, and as there were no bedridden patients in this camp, this included the entire population.

An improvement in the electric lighting of the camp was made by having bracket lamps substituted for the electric lights formerly used, which were suspended from the roof by cords. A bracket lamp was placed on each end pole of the tents, while the center pole was fitted with a three-branch electrolier. This arrangement afforded each tent five electric lights, four of which were of 16 candle power each, and one light for use as a night light of one candle power.

In accordance with the practice of the hospital to afford all possible means of outdoor recreation for the patients, the camp was furnished with abundant facilities for croquet, golfette, baseball, football, and tether-tennis, besides the usual " ward games," such as checkers, cards, and dominoes. Magazines and daily papers were freely distributed so that each patient could find at

hand the form of recreation most agreeably suited to his own inclinations.

During the day the patients were all occupied, either in the tailor shop, shoe shop, or printing office. The percentage employed to the total population of the camp being one hundred. Fifteen patients were employed in the shoe shop, fifteen in the tailor shop, and fourteen in the printing office.

It would have been an easy matter to fill this camp with cases which had a very favorable prognosis for recovery and thus to have been able to return statistics for the period (June 1 to December 1, 1903) with probably 80 per cent recovered and discharged. But such a policy would not only have indicated a desire to produce spectacular statistics, but would have subverted the true sphere of the camp's usefulness.

Cases that showed an uninterrupted favorable course in convalescence were treated in the convalescent wards of the hospital as formerly. The cases which were selected for camp life were those which showed a retarded period of convalescence, the class of cases in which the prognosis is favorable as to ultimate improvement, but in which the duration of the convalescent period is unduly prolonged and subject to periods of partial retrogression and remissions. For this reason the statistics of "Camp D" do not show a sensational number of recoveries, but they do show a decided mental and physical improvement in the total population of the camp with three cases of retarded convalescence sufficiently improved to be discharged (7 per cent), and at least seven (16 per cent) other cases improved sufficiently to warrant the expectation of their speedy discharge. All of these patients were types of those cases in which the prognosis for rapid convalescence was exceedingly unfavorable and the outlook for the restoration of the patient's mental health very uncertain. The patient's lack of insight into his past alienation is the most prominent factor in their cases, which deters the physician from recommending the patient's discharge, it being argued that this lack of appreciation of his past condition on the part of the patient will lead to complications in his future business and social relations with his friends and relatives, when he leaves the hospital. The patient under such circumstances will be only too apt to find in his past hospital residence a basis for delusions of persecution

which may lead to eccentricities of demeanor at any time, the result being, unhappily, detention by the local authorities and a readmission to the hospital.

In this class of cases the camp has shown its special usefulness, and some which formerly seemed hopeless in this respect have been awakened to the realization that their detention at the hospital was for their best interests, and not due to the machinations of their supposed persecutors.

Moreover, the freedom of open air life, and the feeling that they are no longer forcibly detained, act more favorably on the general mental status of the patients, placing them upon their honor as to behavior and affording them the advantage of proving whether or not they are capable of self-control when given special privileges.

The beneficial effects of outdoor life can be judged when it is stated that out of the entire 44 patients, there have been only three on continued medication during the summer.

The general mental status of the patients shows that there were 14 patients (31 per cent) that had partial amnesia; 3 (7 per cent) showed a greater or less degree of apprehensiveness. Of the delusions presented, 4 (9 per cent) were of grandeur; 14 (31 per cent) were of persecution; 3 (7 per cent) were of religion; 2 (5 per cent) were hypochondriacal; 18 (41 per cent) were more or less depressed; 2 (5 per cent) were elated; 4 (9 per cent) were exalted. Of the hallucinations presented, 7 (16 per cent) were of hearing; 2 (5 per cent) were of the tactile senses; 1 (2 per cent) was of smell; 3 (7 per cent) showed a greater or less degree of incoherence; 2 (5 per cent) were more or less restless. No patient in the camp showed either untidy, suicidal, obscene, noisy, maniacal, hysterical, homicidal, filthy, or destructive tendencies.

The average weight of the patients in Camp D, June 1, was 144.375 lbs.; July 1 shows a gain to an average weight of 149.034 lbs.; August 1 shows an increased gain to an average weight of 151.431 lbs.; September 1 shows a still further gain to an average weight of 153.920 lbs.; October 1 shows an average weight of 152.134 lbs.; November 1, 148.007 lbs.; December 1, 149.566 lbs.; the average net gain from June 1 to December 1 being 5.128 lbs.

The lowest individual net gain was .10 of a pound, the highest individual net gain was 13.5 lbs., the ratio between the lowest and

the highest net gains and the average net gain for the camp being 1:135:51.

The average weight on admission was 144.375 lbs., the greatest average weight at any time was 153.92 lbs. (September 1).

Without exception every patient in this camp showed a gain in weight with a concomitant physical improvement. There was no patient who lost weight after his admission to Camp D. This class of patients being more or less convalescent, before admission to the camp, was in fair physical condition, and for that reason an extraordinary gain in weight was not anticipated, as might be reasonably looked for in the case of the tuberculous and other classes of bedridden patients. The physical improvement, however, was greater in proportion than the gain in weight. This was shown in the improved circulation and the ruddy cheeks and lips, also by the increased muscular tone with less tendency to fatigue. With the improvement in muscular tone came also an increased development of the muscular tissue, and it was remarked that the patients lost to a varying extent their flabby adipose tissue and their flesh became much firmer and their general physical condition more "sound."

The patients did not take unfair advantage of the increased liberty afforded, but showed their appreciation of all that was done for them, indicating increased receptiveness, with less tendency to distractibility. Their delusions became less prominent, their hallucinations less vivid. The tendency to introspection was lessened to a marked degree, the patients seemed fully occupied by the affairs of the camp and the majority of them took an active interest in the games and other amusements provided. As an instance of this, it might be mentioned that on the occasion of the field sports, the patients were much interested in seeing that their camp presented an attractive appearance to visitors, and assisted in decorating it with flags and bunting to that end.

The weather during the summer was generally fair, there being an average of but one day a week upon which it rained. There was, however, wide variation in the temperatures recorded. During the period from June 1 to October 1 the temperature ranged from 50 degrees F. to 99 degrees F., with an average noonday temperature of 82 degrees F., being approximately the same at each of the four camps in operation. Thus a dry, hot summer

was experienced, with the comfort of tent life emphasized in a marked manner during this heated period.

The three cases which have improved sufficiently to be discharged presented, in brief, the following symptoms:

CASE No. 1.—Male; age on admission, 23 years; single; nativity, United States; occupation, clerk; assigned cause, over-study; form of insanity, acute melancholia; previous admissions, none; heredity, paternal grandfather insane; education, common school; duration previous to admission, two months; total duration of insanity, nine months.

On admission was much depressed and at times refused to speak; distractible; attention poor; retention fair; had an imperfect insight into his own condition; emotional tone lowered; had no hallucinations; had vague delusions of persecution; was introspective; apprehensive; talked in a rapid manner, but in a fairly connected strain; content of thought, that of impending danger, worry, etc. General physical examination showed no marked abnormality, except a general lowering in the muscular tone.

On admission to Camp D, the patient's mental condition showed very little improvement. After such admission, he gradually improved in physical tone, ate and slept well, took an active interest in outdoor life, and was able to work daily in the shoe shop. At the time of his discharge, October 15, 1903, his introspective tendencies were less marked, he was not apprehensive, and had no delusions or hallucinations.

CASE No. 2.—Male; age on admission, 32 years; married; nativity, Scotland; occupation, journalist; assigned cause of insanity, heredity and over-work; diagnosis, acute melancholia; previous admissions, none; heredity, paternal uncle insane; education, academic; duration previous to admission, 6 days; total duration of the insanity, eight months.

On admission showed delusions of persecution, was well oriented, but had no insight into his own condition; hallucinations of hearing and sight; attention good; retention good; clean, neat, and orderly in dress and habits. Physical examination showed no marked abnormalities, excepting a general lowering in the muscular tone, with a superabundance of flabby adipose tissue. The patient continued to express delusions of persecution and devel-

oped an extreme religious zeal. He would walk for hours with arms folded and head bent, showing an extreme degree of introspection.

The patient was in this condition at the time of his admission to the camp. At the end of the summer he had improved greatly in health, the muscular tremors had disappeared, the flabby adipose tissue had given place to a firm muscular structure. The patient was able to eat and sleep well and take an active interest in the affairs of the camp, occupying himself daily in the printing office. He did not express any delusions or hallucinations and his conduct and general demeanor were normal. Discharged October 23, 1903.

CASE No. 3.—Age on admission, 21; single; nativity, Russia; occupation, tailor; assigned cause of insanity, alcoholism; diagnosis, acute melancholia; previous admissions, one (at which time he was depressed and exhibited delusions of a persecutory character; duration of treatment at first admission, nine months); heredity, denied; education, reads only; duration previous to admission, 1 month; total duration of present insanity, 11 months.

On admission showed delusions of persecution, hallucinations of hearing; attention poor; retention poor; concepts vague, elementary, and ill-formed; content of thought that of persecution; ideation disconnected; emotional tone lowered; conversed in broken, irrelevant manner, showing total lack of insight into his condition or environment; mildly confused; irritable; memory defective; inclined to be careless in dress, but cleanly in habits. Physical examination showed no essential abnormalities.

Upon admission to Camp D he showed beginning of insight into his past alienation and his delusions and hallucinations were not so active. He was, however, inclined to be hypochondriacal and displayed lack of initiative and spontaneity.

At the time of this patient's discharge, eleven months after admission, he had gained 27 pounds over his weight at the time of his admission. He had no delusions or hallucinations. He had perfect insight into his past condition and its causes. He was bright, active, and orderly, working daily in the tailor shop, and was in every way fitted to resume active outside life.

At least a dozen cases could be cited to show the benefits of outdoor life upon convalescent patients in whom the period of con-

valescence is prolonged and to whom all the ordinary methods of treatment have been administered without signal success. For these reasons we feel that their improvement is directly attributable to the open-air treatment in tents.

While the past year has been the first in which the camp treatment has been extended to the above class of patients, no less effort has been made in applying it in the camps previously established for the treatment of the demented and uncleanly, the feeble, senile patients, and the tuberculous patients. In these camps the favorable results shown in former reports have continued to be obtained. While as marked results cannot be expected in the camps for the demented and uncleanly, and for the feeble senile patients, as in the camps for cases of delayed convalescence and for tuberculous patients, yet they are sufficient to justify the continuance and enlargement of this method of treatment. Not only is the improvement, both mental and physical, sufficiently pronounced, but the greater comfort of existence under such new and favorable conditions is a boon to these unfortunate patients, which alone justifies this means of care. The original camp for the tuberculous patients is now a permanent feature in the treatment of the tuberculous insane in the Manhattan State Hospital East, and continues in practical use throughout the entire year.

The third year of the existence of the tuberculosis camp will not be completed until June 15, 1904, and the following report regarding this camp is given for the year ending May 1, 1904. During this time 71 phthisical patients have been under treatment with the following results:

Patients in camp May 1, 1903	40	
Patients received in camp during year	31	
		— 71
Patients died during the year	23	
Patients discharged from camp	9	
		— 32
Patients remaining in camp May 1, 1904		39

Two factors combined to produce a slightly increased death rate, one the unusual number of patients received in whom the phthisical process was complicated with other diseases; the other, the advanced stage of the disease upon admission.

Two of the deaths could not be considered phthisical—one patient dying in paretic convulsions and one in status epilepticus, both having previously shown physical improvement, with the tubercular process held in abeyance. Hence those two cases are excluded in fixing the phthisical death rate. As regards the remaining 21 deaths, in which pulmonary tuberculosis was either a direct or a contributory cause, it may be mentioned that two were senile cases, with marked arterial sclerosis, one of which also developed a severe attack of acute enteritis, one suffered from chronic parenchymatous nephritis, one from chronic interstitial nephritis, one from chronic endocarditis, one from epilepsy, although not dying in status, while one patient not only had phthisis, but also had hepatic cirrhosis, chronic interstitial nephritis and tabes dorsalis. Considering these facts and also that these are insane patients with the most varied forms of mental alienation, the death rate of 29.57 per cent on the number of patients treated and of 8.81 per cent on the total number of deaths occurring in the hospital during this time (238) does not appear excessive, although slightly less favorable than during the preceding year.

The following table of weights shows in a graphic manner the condition of the patients who subsequently died after admission to the camp:

WEIGHT ON ADMISSION OF PATIENTS WHO DIED.

Less than 100 pounds	8
From 100 to 110 pounds	6
From 110 to 120 pounds	5
From 120 to 130 pounds	2
From 130 to 140 pounds	2

The period of camp residence of these patients also demonstrates the advanced stage of the disease when received for treatment, as the average period of camp residence of all who died was but 6 months, 23 days. Two patients lived less than one month, while four lived less than one week after their admission to the camp. Two patients were in such an advanced stage of the disease that they lived but one day after their admission, their condition on admission admitting of no hope for future improvement.

Thus it will appear that our slightly increased phthisical death rate is not caused by any failure of the camp treatment.

During the past year seven patients have been transferred to other wards of the hospital with the disease apparently permanently arrested, who still remain in good health after periods varying from two to ten months. Two patients have been discharged, not only from the camp, but from the hospital, recovered mentally and physically. These nine cases give approximately 13 per cent of the patients treated who may be said to have recovered. The gain in weight and period of residence of the above patients are shown in the following tables:

GAIN IN WEIGHT OF PATIENTS DISCHARGED FROM CAMP.

Greatest gain	83 pounds.
Smallest gain	10.5 "
Average gain	28.83 "

PERIOD OF RESIDENCE OF PATIENTS DISCHARGED FROM CAMP.

Longest residence	1 year, 6 months.
Shortest residence	3 months, 4 days.
Average residence	9 months, 1 day.

It should be added that all of these patients were in an early stage of phthisis when admitted, and all showed a steady progressive physical improvement until their discharge from the camp, thus again demonstrating the added value of undelayed treatment.

But aside from the recoveries the majority of the patients who still remain under treatment have shown marked physical improvement. Twenty of these patients have been under treatment continuously throughout the year. Four who were in the camp a year ago improved sufficiently to be transferred to other wards, but the disease again becoming manifest, they were returned to the camp, while there still also remain under treatment 15 patients received during the year.

Considering the 39 patients who constituted the population of this camp, May 1, 1904, it is found that 27 have improved physically, 8 have failed, while 4 have remained practically unchanged, 3 of whom, however, have been in the camp less than one month. Of the 27 patients who have improved the following table shows the gain in weight during the past year, this being perhaps the best criterion for judging the general condition of this class of patients.

GAIN IN WEIGHT OF PATIENTS WHO IMPROVED DURING PAST YEAR.

Greatest gain	46	pounds.
Smallest gain	3	"
Average gain	16.275	"

Of the eight patients who have shown physical failure the following table gives the loss in weight for the past year:

LOSS IN WEIGHT OF PATIENTS WHO FAILED DURING THE PAST YEAR.

Greatest loss	35	pounds.
Smallest loss	.5	"
Average loss	12.79	"

The patient who lost 35 pounds has died since May 1, he being in an excited, maniacal condition which hastened the course of the disease. Not all of the others are considered hopeless, three especially offering good prospects for future improvement.

It is interesting to note that the best results of the past year were obtained during the winter months, although the past winter was the most rigorous one known in years. From Dec. 1, 1903, to May 1, 1904, the highest temperature recorded out doors at "Camp A" was 48 degrees F., the lowest —4 degrees F., while on 12 different occasions was zero weather registered, accompanied by numerous winds and snowfalls. The mean overage outdoor temperature during the winter was as follows:

December	30.03	degrees F.
January	23.4	"
February	24.4	"
March	34.16	"

Notwithstanding this unusual severity of the weather, the camp patients passed the winter without discomfort, and it was during this period of the year that the most marked gains were made, as is shown in the following table, which gives the number of patients attaining their highest weight in each given month, excluding such patients as died and three who have been in the camp less than one month.

May, 1903	5	Nov., 1903	5
June, 1903	3	Dec., 1903	6
July, 1903	0	Jan., 1904	5
Aug., 1903	2	Feb., 1904	7
Sept., 1903	2	Mar., 1904	7
Oct., 1903	1	Apr., 1904	2

The temperature of the interior of the tents was maintained in cold weather at from 60 to 65 degrees F. by means of two large coal stoves in each tent, but even in the coldest weather such patients as were able were given outdoor exercise, a wide board-walk being arranged for their special use. And becoming gradually accustomed to the cold as they did, no complaints were heard, and quickened circulation, augmented appetite and increased power of assimilation showed that this treatment was of far more value than medicinal aid. While the heating facilities of the camp were such that a higher temperature could have been maintained within the tents, experience has proven that a temperature higher than 65 degrees F., or at the most 68 degrees F., is attended with less favorable results, for while, as is well known, even freezing fails to destroy the tubercle bacillus, yet a low temperature inhibits its activity. But the most potent factor in producing the beneficial results of the winter months, appears to be the stimulating influence to the circulatory system with increased resistance to the ravages of this bacillus.

The fact that not a single patient did as well in July as in other months of the year calls for special comment. During this month 43 patients were under treatment, but 17 of whom showed a gain in weight, 20 lost weight, and 6 remained unchanged. Aside from the general unfavorable influence of the hot weather, this may be explained by the great variability of the weather during this month—a most unfavorable condition in the treatment of pulmonary tuberculosis. During July, 1903, the temperature at the tuberculosis camp ranged from 66 degrees F. to 99 degrees F.; within a single day there was a range of 16 degrees F., while upon 7 days there was a variation of over 11 degrees. Considering, also, that for 12 days out of the month it was either cloudy or rained, it may be seen that an undue proportion of moist hot weather was experienced with its devitalizing effects upon the consumptive, as upon mankind in general.

Twenty-one patients remain in the hospital who were among the original camp residents when this system of treatment was inaugurated in June, 1901, of which number 16 are now in the camp, 9 of whom have been continuously under treatment since that time. The results obtained for the past year in these cases is, of course, included in the table showing the results obtained in the

entire number of patients treated. Five of the original phthisical camp patients are in other wards of the hospital, all in good physical health, the time intervening since they were removed from the camp varying from 2½ years to 8 months. These original 21 camp patients still remaining in the hospital made an average gain in weight under treatment of 36 lbs. That even patients advanced in the disease should not always be considered hopeless is evidenced by the following table, which shows the weight of these patients on admission to the camp, thus furnishing an index to their general physical condition at that time:

WEIGHT ON ADMISSION OF 21 ORIGINAL CAMP PATIENTS STILL IN HOSPITAL.

Under 100 pounds	8
From 100 to 110 pounds	6
From 110 to 120 pounds	3
From 120 to 130 pounds	2
From 130 to 140 pounds	1
From 140 to 150 pounds	1

One patient gained 74 pounds—from 90 pounds on admission to 164 pounds when transferred from the camp. Another one of this number just doubled his weight in a period of 14 months, weighing when admitted 83 pounds, and when transferred 166 pounds.

Such improvements in the arrangement and construction of the camp as have been suggested by experience have already been mentioned in discussing the camp for convalescents and shop workers. These improvements have equally been applied in detail to each of the four camps at present constituting the tent system at the Manhattan State Hospital East.

In addition certain improvements in the tuberculosis camp are not applicable to the others. During the winter months, when the sides of the tent are necessarily closed, it was found that on stormy days the darkness was a serious objection. This has been obviated by inserting windows in the canvas wall, the window frame being supported by the timbers which also supported the stove pipes as they pass through the canvas. And contrary to expectations, not a window has been broken, notwithstanding the severe wind storms experienced. These windows also serve as a means of ventilation, supplementing ventilators placed at either end in the top of each tent.

Another innovation has been the carrying out of a suggestion of Dr. Macdonald's in the construction of small revolving tents, so placed upon a base with rollers between that they may be readily turned to face any direction, so as to give the patient the benefit of a sun bath during any period of the day, or what is equally important, to afford means of protecting them from the direct force of the wind. No patient with a continuous elevation of temperature is allowed to take exercise, but such a patient when placed in one of these small revolving tents can take his "rest cure" literally out of doors, the canvas being left open at least upon one side. One revolving tent has been constructed sufficiently large to contain two beds, and thus the same advantage is afforded to such patients as are too weak to use the reclining chairs which are placed in the smaller tents.

The utmost care is taken in guarding the personal hygiene of these patients, and the usual precautions are observed in caring for the sputum, clothing, etc., so that it may safely be asserted that a non-tubercular patient would have less chance to develop the disease in the tuberculosis camp than in any other ward of the hospital.

In conclusion we would state that in the extension of the camp treatment, as we have endeavored to outline it, we have found but few classes of insane patients who are not capable of improvement when living an outdoor life, even if it be feasible to provide camps for certain classes but for a comparatively brief period during the favorable months of the year. Even upon normal individuals camping exerts a most health-giving influence; how much more then should its therapeutic value be manifested in the mentally deranged. In the restoration of mental health, the effect of the unrestrained life in tents appears to be of vital importance, and it is our opinion that this freedom cannot be as satisfactorily obtained by the use of pavilions, either of a permanent or semi-permanent type, the tent system alone being competent to fully supply this want.

Two tables of statistics are appended showing in a condensed form the general results obtained in the camps for convalescent and tubercular patients, such results being deemed the most significant, although, as has been stated, the results obtained in the camps for the demented and uncleanly, and for the feeble senile

patients, have been in some respects no less gratifying. For the future, it is proposed, whilst continuing the use of the camp for consumptives throughout the year, to enlarge the capacity and extend the scope of the summer camps so that in the current year three hundred patients may be thus provided for instead of one hundred and seventy-five as in 1903, and bedridden cases from the hospital wards and others of different types may be accommodated.

TABLE OF GENERAL STATISTICS.

CAMP FOR TUBERCULAR PATIENTS, FOR A PERIOD OF 366 DAYS, MAY 1, 1903, TO MAY 1, 1904.

Capacity of camp	43
Number of patients admitted	71
Number of patients discharged	2
Number of patients transferred to wards	7
Number of patients died	23
Number of patients out for exercise (average)	28
Number of patients confined to bed (average)	15
Number of patients on continued medication (average)	20
Number of patients improved—	
(a) Physically	39
(b) Mentally	24
(c) Discharged from camp	9
Number of patients employed in camp ward work (average)	15
*Percentage discharged	3%
Percentage transferred to wards	10%
Percentage died	33%
Percentage out for exercise (average)	40%
Percentage confined to bed (average)	21%
Percentage on continued medication (average)	28%
Percentage improvement—	
(a) Physically	55%
(b) Mentally	34%
(c) Discharged from camp	13%
Percentage of patients employed	21%

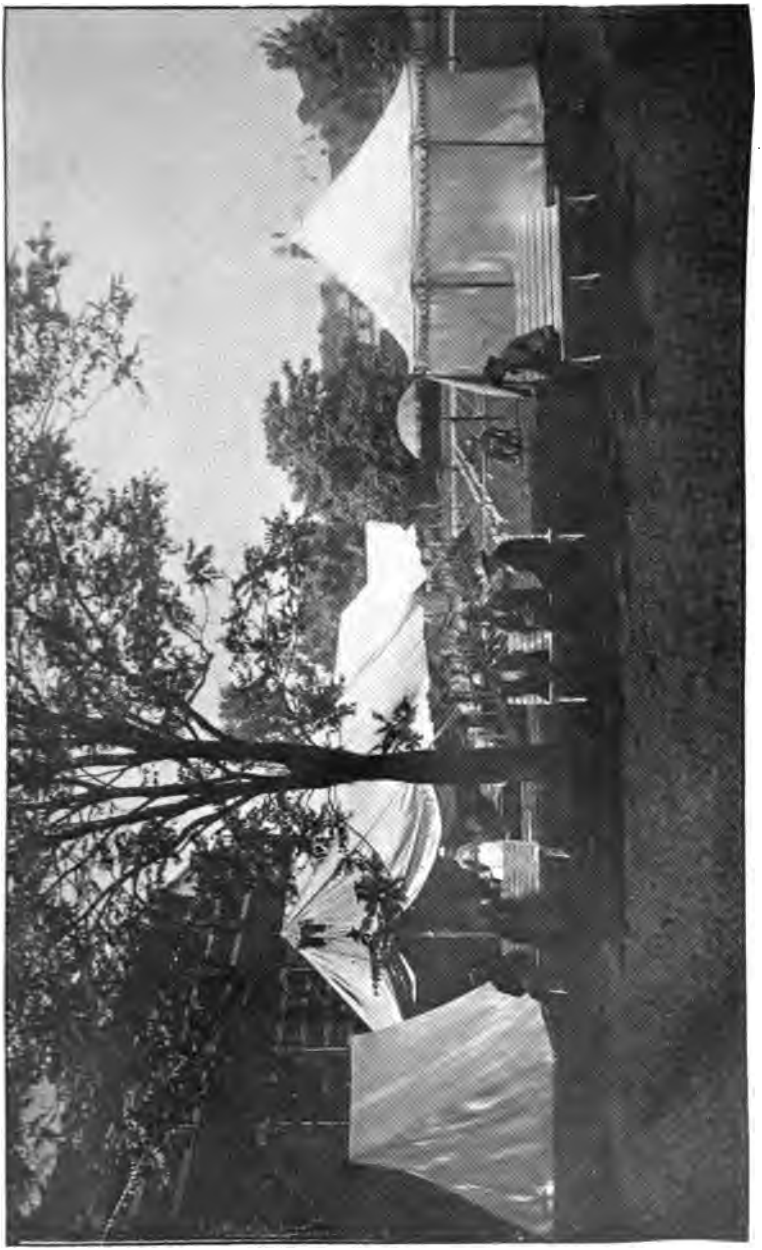
*Percentages are based on total number of patients under treatment.

TABLE OF GENERAL STATISTICS.

CAMP FOR CONVALESCENT AND SHOP WORKERS, DURING A PERIOD OF 183 CONSECUTIVE DAYS, JUNE 1 TO DECEMBER 1, 1903.

Capacity of camp	44
Number of patients admitted	47
Number of patients discharged	3
Number of patients died	0
Number of patients out for daily exercise	44
Number of patients bedridden	0
Number of patients on continued medication	3
Number of patients improved—	
(a) Physically	47
(b) Mentally	47
(c) Improved and under consideration for discharge	7
(d) Improved and discharged	3
Number of patients employed	47
Occupations—	
(a) Printers	15
(b) Shoemakers	16
(c) Tailors	16
*Percentage discharged	7%
Percentage out for exercise	100%
Percentage on medication	7%
Percentage improvement—	
(a) Physically	100%
(b) Mentally	100%
(c) Improved and under consideration for discharge	15%
(d) Improved and discharged	7%
Percentage employed	100%
Occupations—	
(a) Printers	32%
(b) Shoemakers	34%
(c) Tailors	34%

* Percentages are based on total number of patients under treatment.



MANHATTAN STATE HOSPITAL EAST—CAMP E.—FOR FEEBLE AND DECREPIT MALE PATIENTS.

American Medico-Psychological Association

PROCEEDINGS OF THE SIXTY-FIRST ANNUAL MEETING.

TUESDAY, APRIL 18, 1905.—FIRST SESSION.

The Association convened at 10 a. m. in the Convention Hall of the Menger Hotel, San Antonio, Texas, and was called to order by the President, Dr. T. J. W. Burgess, of Montreal, Canada. An invocation was offered by Rev. E. D. Mouzon, D. D.

The President introduced Dr. Marvin L. Graves, Chairman of the Committee of Arrangements, who said: "Texas will extend to her friends from the East and the West, the North and the South, a cordial greeting to-day, and I introduce to you first a gentleman who has grown somewhat gray of head in fighting the battles of organized, legitimate medicine, but whose heart, like that of Dr. Oliver Wendell Holmes while living, is still young, and whose mental faculties, active and alert, present the unusual combination of maturity and wisdom with the sparkle and vigor of youth. I have the pleasure of introducing to you Dr. F. E. Daniel, President of the State Medical Association, who will welcome you for the three thousand doctors of Texas." (Applause.)

Dr. Daniel spoke as follows:

Mr. President, Members of the American Medico-Psychological Association, Ladies and Gentlemen:

It is my privilege, my great pleasure, and a distinguished honor to welcome you in the name of my colleagues of the State Medical Association, and on their behalf I extend to you the right hand and greet you, friends and brothers, and welcome you to this Empire of the West. Texas, though only a younger member of the great sisterhood of States, is famous the world over. Who, in the remotest part of the civilized world, does not know of the Lone Star of Texas, of the battle of the Alamo? We are a happy, prosperous people, proud of our State, proud of her splendid citizenship, of her history, and proud of her institutions, her great wealth and wonderful resources, as yet scarcely touched. We are proud of her strong men and beautiful women, and proud of our State institutions. Especially

are we proud of our splendid psychopathic hospitals and their talented superintendents, who are an honor to the State; and doubly proud of the splendid provision the State has made for the care of the unfortunates.

We welcome you to the famous city of the Alamo. So long as civilization shall endure, the names of Travis, Crockett, and Bowie will live in song and story, and the tale of the Alamo will sound down the ages to the remotest time, along with that of Marathon and Thermopylæ. Here was poured out that "boon that heaven holds dear,"

> "The last libation that Liberty draws
> From hearts that bleed and break in her cause."

As from Daphne's virgin blood sprang the laurel, the emblem of honor and immortality, so the blood of our hero patriots enriched the soil of Texas and became the fruitful germ whence has grown a magnificent civilization which will ever honor their names and keep their memory green.

Many of you gentlemen, perhaps, have not visited Texas before. You have had no experience in the delights of a sun-kiss'd, blossom-blest land like this. Your visit is as timely as it is welcome. You see the land at its best. You see the old Spanish city in her Easter attire, as gay and happy and blushing as a bride. Cybele has unlocked the storehouse of her treasures and scattered her jewels broadcast over the land. Our boundless billowy prairies, "as broad as the sweep of the tidal wave's measureless motion," were a little while ago the home of the buffalo and the hunting ground of the roaming savage. To-day they are brilliant with the bloom and fragrant with the perfume of the lily and the rose, as well as the wild foxglove and the gentian, the bluebells and the daisy. Dotted with flocks and herds and villages and hamlets and happy homes, the air is vocal with the hum of husbandry. The cheery "gee haw" of the plowman is everywhere heard, as he prepares for that harvest that feeds and clothes the world; and as the mellow mould turns from his plow, see the eager, noisy flocks of blackbirds following in his wake, to catch the "early worm."

> "The down of the thistle and the bob-o-link's whistle
> Are blent with the vernal day's light and perfume."

In our cities, too, the rattle of machinery, the noise of traffic, and the hum of industry are sweet, familiar sounds. Across the State from Texarkana to Brownsville and from Longview to El Paso—and across from Denison to the Gulf the State is ribbed with iron bands, and over broad plains and mountain steeps, and mighty rivers and purling brooks, and hill and dale, lumbering trains bear to the bosom of the ocean the products of our soil. It is a pretty sight to stand on Chatauqua Hill at San Marcos, "the loveliest village of the plain," and watch two splendid vestibule trains, the I. & G. N. "Flyer" and the "Katy" "Cannon Ball," racing in sight of each other for miles, to the quaint old city, laden with tourists to see the Alamo and the long line of missions founded two hundred years ago. One can but stand and wonder at the durability and

beauty of the Moorish architecture, and towers and minarets of two centuries ago, and the quaintly carved doors and altars, the work of the fanatical Franciscan monks; and bearing health-seekers to bask in our soft southern sun and to breathe the balm of our fragrant air, and to drink in deep draughts of health. They are welcome. We dwell indeed in a favored land. The setting sun lingers to throw a last kiss "good-night" to Texas, and sinks to rest suffused in a halo of his own blushes. This is a land of the pomegranate and the fig, the magnolia and the olive.

"Here rage no storms; the sun diffuses here
His tempered beams thro' skies forever fair;
Here gentle airs o'er brakes of myrtle blow,
Hills greener rise and purer waters flow.
Here bud the woodbine and the jasmine pale,
And every bloom that scents the morning gale,
While thousand melting sounds the breezes bear
In silken dalliance to the dreaming ear,
And golden fruits mid shadowy blossom glow."

But, gentlemen, you are not here alone for pleasure. You are not here for the gratification of the senses, however delightful. You are here to work for humanity and the advancement of that young science born but yesterday, of which you are the distinguished and honored exponents and apostles. There is no brighter page in the history of medicine than that wherein is recorded the birth, growth, and evolution of psychiatry, the scientific treatment of the diseased mind. It makes us shudder to look back and recall the cruelty and barbarity inflicted through ignorance upon the unfortunates, even one hundred years ago. It makes us sad to recall what was their sad fate before God inspired Pinel and Esquirol and Ray and Rush and Galt and Stribling and Woodward and Bryce, and that angel of mercy, ever blessed be her name, Dorothy Dix, through all of whose inspired and divinely guided labors we have reached the position of our splendid psychopathic hospitals and the rational treatment of diseases of the mind. High upon Fame's proud temple their names are inscribed in letters of living light and will endure forever.

It makes us dizzy to recall the advances that have been made in the last quarter of a century, for within that time the new psychology has been born. It was not evolved out of the old psychology, for that was such in name only. The immortal Locke, the father of the old psychology, had not, of course, the faintest conception of the wonderful truths and discoveries that have occurred, which show the mind in all of its multitudinous phases, of ideation, thought, memory, and consciousness itself, to be the function of the brain, evolved by chemical action—a force, a mode of motion, if you please—a specialized energy, transformed by the original dynamo—the brain—into what I believe is identical with electro-magnetic energy.

Locke and his followers of the old school, and all the world, conceived of the mind as being the soul—something outside of, external to, independent of the organism, which entered the body of the babe at birth,

controlled the life of the man, shaped his destiny, and which at death was liberated and was immortal. That was a psychology of speculative philosophy, the "science of the soul" (*psyche*). We have now a new psychology, Professor James to the contrary notwithstanding, a science of the mind. All scientific men now recognize that the mind is purely a physiological process, independent of any external or supernatural causes.

If it makes us dizzy to contemplate the advances of psychology in the past, it makes our heads swim to contemplate the possibilities of the future. We stand to-day, gentlemen, upon the shoulders of our immediate predecessors, and as we look into the opening vista of the twentieth century, the field opens, even broader and unending, and we are startled at the possibilities that await the further investigation of the brain cells. While much has been accomplished, there is much yet to be accomplished. Surely, it was thought that when Flechsig demonstrated the association centers, and the sensory and motor areas were clearly mapped out, we had reached the limit; but there are other problems. What is consciousness? How does it arise? Given the thought cells, how is thought produced? How is it distilled from the elements of the food that float in the blood that bathes every other cell in the body?

But, gentlemen, you are less concerned with psychology than with psychopathology and psychiatry. You are here to study your special branch of science and to devise means and methods for better construction and management of your institutions, and the care of your patients, but we have well-nigh reached perfection in that. You deal with the sick mind. It is yours to

> " * * * minister to a mind diseased.
> To pluck from the memory a rooted sorrow,
> To raze out the written troubles of the brain,
> And with some sweet oblivious antidote
> Cleanse the stuff'd bosom of the perilous stuff
> That weighs upon the heart."

There is much work before you. You gentlemen, in your organized capacity, are an immense power for good. That power should be exerted. While science has advanced along this line, jurisprudence has stood still, and I say that it is a disgrace to the State of Texas that while 42 or 44 forms of insanity are recognized by scientists, jurisprudence recognizes only two forms the "natural" and the "acquired," and the absurd test of knowing right from wrong, adopted in the McNaughton case two hundred years ago, is still the rule in our insanity trials. And unfortunates who are arraigned on a charge of murder, and where insanity is the defense, have not the benefit of a diagnosis by the light of modern science.

Much could be said along this line. I would refer to the absurdity of having a jury of laymen to decide such a question. In our jury system, the more ignorant a man is, the better qualified he is to act, according to the practice of our jurisprudence. Experts testify and they always differ,

and the courts call in twelve farmers, mechanics, tinkers and tailors and candlestick makers, day laborers, and what not to decide.

But, gentlemen, I am occupying your time. There are many things you will have to consider. The jurisprudence of insanity has not progressed with science. You should have influence with Congress, but I am afraid in many of the States you will find that the most of the legislators ignore science and are moved solely by sentiment. There is one problem before you to which I wish to call attention. I refer to the alarming, terrible increase of insanity. What is the cause of it? Dr. Graves, in his admirable address delivered at Galveston last month, made the startling assertion that the insane in Texas in the last 45 years have increased 6800 per cent, while the population has increased but 504 per cent, that is, nearly 14 to 1. What is the cause of it? How can it be arrested? It is out of all proportion to the population and out of all proportion to the increase of crime, which is truly appalling. Something must be done, if possible. And it does seem to me, gentlemen, that our whole humanitarian system aims at and fosters the survival of the unfit and the propagation of the defective. It is race suicide.

And now again, welcome. We set before you bread and salt, symbols of our most generous hospitality. We would send you home with a song in your heart and ask for ourselves a place there. We would say, "Rest you here. Bide with us awhile. We would do you honor." (Applause.)

DR. GRAVES.—Ladies and gentlemen, orators are indigenous to Texas soil, but none of them are more gifted than the gentleman whom I now present. His genial personality, his scholarly attainments, the melody and magnetism of his voice and thought equally charm whether in the pulpits of our country he is telling the old, old story of Jesus and His love, or upon the platform, showering gleaming sparks from his intellectual anvil, or placing a jeweled diadem upon the brow of America's uncrowned queen. I have the pleasure of introducing to you Rev. Homer T. Wilson, who will welcome you for everybody.

Rev. Homer T. Wilson, D. D., spoke as follows:

I do not really know whether I can speak after that speech of introduction. Some time ago, when I was invited by your committee to deliver a speech of welcome on behalf of the public of our city, I thought at first it would be well for me to give very careful, studious preparation to that address, and I began the study of the history of your honored profession. But I found so many words that I did not understand (Laughter) and so many of them that I was afraid to try to pronounce before this body, that I gave the whole thing up, and I made up my mind to one thing—that you gentlemen are the smartest class of men in the world—next to the preachers. (Laughter).

I assure you, my friends, that in the history of our beautiful Southland city of the Alamo I have never known a body of men assembled here in convention for whom I have personally higher regard, and on behalf of the public of our city it is indeed a pleasing task to bid you a hearty welcome. I note with pleasure that some of you have brought your wives. Others seem to be here on a pleasure trip and have left their wives at home (Laughter and applause.) All of your anticipations will be fully realized and the sweet memory of your visit here will always be pleasant to recall.

You represent, gentlemen, a very honored ancestry and the history of the human family is a history of the endeavor of the greater minds to relieve human suffering, and you have made the greatest progress of all the sciences known to man. There is a little difference, however, in the work of your hands and the work of other men of genius. If the artist places upon the canvas a beautiful picture, and perchance makes a mistake and leaves there the imprint of a finger, the world notes it. If the sculptor produces a noble statue, but through a slip of the chisel makes a little mistake, the world notes it. In the progress of invention, I was forcibly reminded at St. Louis of the progress which has been made in the steam engine. How magnificently the mechanic has advanced in the line of his inventive genius, and there in that great Machinery Hall were samples of the work of the different ages and different minds, and it is beautiful to note how they have advanced, and how here and there, though making mistakes, have improved until you can see the mistake and the improvement side by side. It is a beautiful sight—wonderful to see the advancement so plainly portrayed. You have the advantage, gentlemen, in that whatever mistakes you may have made are covered with floral offerings, and when we join the white-robed hosts of heaven, how soon are we forgotten here!

It gives me pleasure, gentlemen, to pay a tribute to your profession. We recognize your power, not only in relieving human suffering, but you hold in your hands as no other class of men the destiny of the human soul. In the church to-day we have learned the lesson that when our missionaries go to heathen lands to present the Christ, that in every instance we have them prepare themselves to attend to the wants of the body as well as the soul, for we are coming to recognize the value of the uplift to intellectual and spiritual character through medicine, as well as through the pulpit. I appreciate the glorious work in which you are engaged. I want to say to you from the depth of my heart, there are no persons in the world who have such depth of appreciation as those who stand by the bedside of suffering and distress.

As a father have I stood again and again and watched the face of that man we love better than all others, the family physician, and we have seen the moist eyes and could not gain a ray of hope, and we have seen when the hand was laid gently upon the fluttering pulse, and how perfectly charmed were that father and mother when they hear from the physician that there is hope!

My dear friends, your position in this world is great. Your influence in

shaping the destiny of mankind is greater than that of any other profession engaged in the material forces of this world, and if you are not the highest class and type of Christian manhood, you ought to be, for the development of character and the welfare of mankind are often placed in your hands. You are dealing not only with the physical, but the mental. You have gone a little higher and are dealing with that most difficult problem, the human brain, and I commend you for the splendid influence you exercise over humanity.

On behalf, then, of this public, the people of San Antonio, I bid you one and all a cordial greeting. As the mouthpiece of the public I say, may God's richest blessing rest upon you in your visit here, and when you are gone, may we have the pleasant memory of your visit, as you, I trust, will carry with you the memory of this beautiful place, and what is more, the memory of kindly words and the hand-grasp that is prompted by the heart of loving sympathy. And may this convention to you and your profession be a long step upward and onward, and while you are with us in the enjoyment and pleasures that I trust will be yours, I pray that heaven's blessing may rest upon you in your deliberations, and when this convention is closed, we may all feel, "It was pleasant to be together." (Great applause.)

DR. GRAVES.—This is the greatest and best of Texas municipalities. This is the home of hospitality. It is the nursery of Texas liberty and independence—a liberty that is not license, an independence that is not exclusiveness. I have the pleasure of presenting to you the Hon. F. C. Davis, our excellent City Attorney, who represents the Mayor of San Antonio, the City Beautiful, where flowers bloom all the year around and where every heart is yours.

Hon. F. C. Davis spoke as follows:

Ladies and gentlemen of the American Medico-Psychological Association—is that right, Mr. President? (Laughter.) At the request of the mayor of our city, ladies and gentlemen and members of the Association and friends, it is my great pleasure to welcome you to the city, not as strangers, but as friends and as guests whom we are delighted to entertain and proud to honor. The gentleman who preceded has welcomed you to Texas, and the gentleman who has just sat down took the liberty to welcome you to San Antonio, but, gentlemen, that is our business; you are our guests. When the mayor requested me to make this address, I asked him what I was to say to you. He said to tell them that San Antonio has no keys while they are in the city. Every door is unlocked.

About these insane people—Dr. Graves says that there has been an increase of 14 per cent to 1 per cent increase of population in this State of Texas, but, gentlemen, they were not raised here! (Laughter.) When

we try that class of people, if any of them get in here, I have always had one of these experienced doctors to testify. Seriously, we have had but a single one in my experience who did not come from another State.

I desire simply to state that San Antonio feels flattered at your presence and we hope you will feel at home. We feel proud of our city. Nature has done much and public generosity has added to this. Expression has been exhausted in extolling the purity of this healthful climate, and what nature has failed to do the skillful hand of your noble profession has done to assist nature, and for this great credit is due our local physicians. We are the most distinguished community in the world for health. (Applause.)

DR. GRAVES.—There is a tradition to the effect that the word "Texas" is derived from an old Indian word, "Tehas," which means "welcome." I am not an etymologist, so I cannot say whether this is true or not, but I do stand sponsor for the sentiment here to-day. In behalf of the local Bexar County Medical Association, which is the best of the county societies in Texas, I have the pleasure of introducing to you Dr. L. L. Shropshire, genial and eloquent, representing the local medical society, who will spell for you hospitality with a large H, and welcome with a large W.

Dr. Shropshire said:

Mr. President and Gentlemen of the American Medico-Psychological Association:

I feel that great injustice has been done me, in being called upon to follow such medical, legal, and spiritual prodigies. (Laughter.) I do not claim to be an orator, but I will give you as cordial welcome as they.

On behalf of the Bexar County Medical Association it has become my pleasant duty to welcome you as our guests at this, your sixty-first annual meeting. In doing so, gentlemen, I beg to assure you that I welcome you with all the zeal and fervor which that word implies.

From all over this great American continent you have assembled in your annual meeting to-day for the accomplishment of a great, good, and scientific work, and at the request of the local profession I extend to you a most welcome and hearty greeting.

We welcome you, gentlemen, to our historic city, the cradle of Texas liberty. You meet to-day almost at the threshold of that grand old Alamo, made famous by the daring deeds of our countrymen, whose walls have been again and again baptized with the blood of our heroes. As citizens of this great Empire State we look upon it with awe and reverence and remember with admiration and love Travis, Crockett, Bowie, and others of that Spartan band, who so freely gave up their lives that liberty might

live. Here, almost in the shadow of that grand old battle-scarred building, made glorious by its baptism in the blood of heroes, who chose to die for the good of others; here upon ground held sacred by all who love liberty; we come to welcome you as representatives of our noble profession, which has faced death for the good of mankind as earnestly and as bravely as those who died in this historic building. Wherever pestilence or deadly scourge has smitten the human family, there can be found members of our profession faithfully and fearlessly facing danger in a more appalling form than that which follows the carnage of war. They take their lives in their own hands and fight back grim death, protect the living, and minister unto the suffering and dying. As the representatives of such a profession we are proud to welcome you to our city and to our homes.

We recognize in this distinguished body of alienists and neurologists that branch of our profession which is especially deserving of the love and gratitude of the whole profession, as well as the public at large, for the great strides they have made in the successful care and treatment of that unfortunate class of individuals, who are from disease or otherwise about to be shut out from the light of the world by mental dethronement. Upon you, gentlemen, the world at large and society in general are very much dependent for your opinions in matters affecting the application of both our civil and criminal statutes. To your opinions must the courts of the commonwealth turn for the just application of the laws in efforts to dissolve wills where millions and millions of dollars are at stake. To you also must the jury of your peers look for the satisfactory evidence in determining the fate of the criminal where the plea of insanity has been invoked. "Since grim darkness felt the might of God and fled away," the path of the world has been one of advancement, and we of to-day live in a wondrous time; in a century instinct with the spirit of progress; in an era made radiant with the electric light of science; in a golden age made illustrious by the magnificent march of mind; but in no trade, calling, or profession has that progress been more manifest, has that march of mind been more apparent than in the one which you represent.

Again, gentlemen, in calling your attention to the sacred history of this hallowed spot upon which we stand, don't let me forget to remind you that, aside from the battle-scarred walls of our missions, made sacred by the blood of our heroes, whose memory we revere and love so well, the great Dispenser of natural gifts has blessed us with a climate unequaled by any on this continent. If our climate could be used as assets, Texas would be the richest as well as the grandest State in the Union. You have doubtless all been impressed with the fact that we often send our patients to your climate for the benefits they may derive from the change, and to escape the heat of summer, and I want to impress upon you also, that if you once try it, you will always send your patients to our climate for the benefit to be derived from a change, as well as the escape from the rigors of the frozen North. Fresh air and sunshine, the parents of eternal Spring, are with us more days in the year than any other locality on this continent. Ever abreast of the times, our specialists in your branch of the profession are

rapidly supplying themselves with sanitaria for the better care of such patients who need fresh air and sunshine from January 1 to December 31.

I trust that your visit among us may be enjoyable, that your deliberation may be fruitful of good work, and that in after years you may look back upon your brief sojourn in the Alamo City as a green spot in your memories.

On behalf of the local profession, I again bid you welcome to the metropolis of the greatest State of the greatest nation under the sun. (Applause.)

THE PRESIDENT.—In the name of the American Medico-Psychological Association, I take pleasure in thanking you for the cordial welcome that has been extended to us on behalf of the State, the city, and the medical profession.

We have long heard of your great State and rejoice to be now able to see it for ourselves. I say great State, for assuredly it is great—great in that it is the largest State in the Union, exceeding in size the whole of New England with Maryland, New York, Ohio, Pennsylvania, and the two Virginias thrown in; great in that it has a larger number of miles of railway than any other State; great in that it is the largest producer of cattle and cotton, and stands fifth of the States for population, with the prospect of outstripping all of them in this also. Nor is it only in these respects that it is great. What State can boast of older or prouder historical reminiscences? Over it have floated no less than six different flags, to each of which is attached a host of soul-stirring memories—those of France, Spain, Mexico, the Texan Republic, the Southern Confederacy, and the United States. On its soil was fired the last shot of the great Civil War, and in its capital stands a monument bearing one of the noblest epitaphs ever penned, "Thermopylæ had its messenger of defeat; the Alamo had none."

Though many of you may not be aware of it, there is a very close bond of union between the State of Texas and our Canadian Province of Quebec, in that both are indissolubly linked with a name dear to all Canadians, that of the intrepid explorer, Robert de la Salle. Somewhere in Texas soil were interred the remains of that great and heroic man, buried by his faithful adherent, Father Douay, after his foul murder by his mutinous followers, and less than three miles from the hospital over which I have the honor to preside are the ruins of La Salle's Canadian home, the home which he built and in which he lived for some four years

of his early Canadian life, the home in which were planned the great schemes for the extension of New France, which engrossed his remaining days.

Not less rejoiced are we that in visiting your State for the first time, our meeting place should be the ancient and beautiful city of San Antonio, the birthplace of Texan liberty, the scene of heroic deeds, the place where Travis, Crockett, Bowie, and all their valiant band fought their last fight and gave their lives that Texas might be free.

But, gentlemen, it is not alone as sightseers and hero-worshippers we are here. We have in addition a serious purpose in view—the discussion of problems connected with our particular branch of medicine, and the practical matters associated therewith. The noble and Christ-like work of ministering to the mind diseased, in which we are engaged, will, we trust, receive an added impetus from our meeting in your midst, and the close of our sessions will, I feel assured, see each of us the better prepared and the more resolute to devote himself with all his strength to the tasks assigned him. There is much, very much, to be done in our specialty, and I for one rejoice that it is so, with all my heart saying:

> "God be thanked that the dead have left still
> Good undone for the living to do—
> Still some aim for the heart and the will
> And the soul of a man to puruse."

Again I thank you for your cordial welcome. We came as strangers but feel so no longer. You have already made us feel that we are at home, and that only friends surround us. (Applause.)

THE PRESIDENT.—The next business on the programme is the report from the Committee of Arrangements.

DR. GRAVES.—The President has permitted us to make a change in the final programme, and I will call your attention to the cordial invitation extended to all visiting members of this Association and their friends to the reception to-night at the Southwestern Insane Asylum. It will begin at 8 o'clock and will consist of a musicale and dancing. The cars can be taken at 7.15 o'clock in front of the Menger Hotel. You then transfer to the Hot Springs line.

To-morrow afternoon at 2.30 o'clock a ride throughout the

city by carriage and to our historic missions has been arranged by the courtesy of the Bexar County Medical Association. It will be necessary for you to be ready to start on time.

For to-morrow evening nothing special has been arranged, but there is a theatrical performance at the Grand. E. H. Sothern and Julia Marlowe will appear in Shakespearean productions, and undoubtedly a large number will avail themselves of the opportunity to be present.

Thursday night at 8.30 o'clock, in Turner Hall, the Business Men's Club of this city extends a cordial invitation to friends and members to be present at the Mexican banquet. This is a warm number in this climate. (Laughter.)

On Friday morning a drive and luncheon is tendered to the ladies of the visiting Association by Mrs. Dr. Frank Paschal, and carriages will call at the Menger at that time. On Friday night at 10.25 the train leaves for the Mexican trip. Tickets are good for thirty days. You will arrive in Mexico City at 10.30 o'clock Sunday morning, in time to see the bull fight, which is the national amusement of Mexico. This will be a delightful trip. You are permitted to stop off at Monterey or at any place on the route. If those who wish to go will give me your names, I will see that sleeper accommodations are reserved. (Applause.)

THE PRESIDENT.—Not having the necessary books and papers before it at last night's meeting, the Council was unable to prepare its report, which will, therefore, be presented to-morrow. Dr. Hurd has also asked that the report of the editors of the American Journal of Insanity be deferred until that time.

My next duty is the appointment of the Nominating Committee. As that committee I will appoint:

Dr. Chas. W. Pilgrim, of New York.

Dr. Wm. F. Drewry, of Virginia.

Dr. M. J. White, of Wisconsin.

There will now be a short recess for the registration of members and friends, after which we will take up the memorial notices of deceased members.

The following members registered as being in attendance during the whole or a part of the meeting:

Applegate, Charles F., M. D., Superintendent Mt. Pleasant State Hospital, Mt. Pleasant, Iowa.

Beutler, W. F., M. D., Superintendent Asylum for Chronic Insane, Wauwatosa, Wis.

Buchanan, J. M., M. D., Superintendent East Mississippi Insane Hospital, Meridian, Miss.

Burgess, T. J. W., M. D., Medical Superintendent Protestant Hospital for Insane, Box 2381, Montreal, Que., Can.

Busey, Alfred P., M. D., Superintendent Colorado State Insane Asylum, Pueblo, Col.

Caples, Byron M., M. D., Superintendent Springs Sanitarium, Waukesha, Wis.

Crumbacker, W. P., M. D., Superintendent Independence State Hospital, Independence, Iowa.

Dent, Emmet C., M. D., Superintendent Manhattan State Hospital, Ward's Island, New York City.

Drewry, William Francis, M. D., Superintendent Central State Hospital, Petersburg, Va.

Graves, Marvin L., M. D., Superintendent Southwestern Insane Asylum, San Antonio, Texas.

Hancker, William H., M. D., Medical Superintendent Delaware State Hospital at Farnhurst, Farnhurst, Del.

Harmon, F. W., M. D., Superintendent Longview Hospital, Cincinnati, Ohio.

Hattie, W. H., M. D., Medical Superintendent Nova Scotia Hospital, Halifax, Nova Scotia.

Hill, Charles G., M. D., Physician in Charge, Mt. Hope Retreat, Baltimore, Md., Station E.

Hill, Gershom H., M. D., Nos. 210-211 Equitable Building, Des Moines, Iowa.

Hurd, Arthur W., M. D., Superintendent Buffalo State Hospital, Buffalo, N. Y.

Hurd, Henry M., M. D., Superintendent Johns Hopkins Hospital, Baltimore, Md.

Hutchings, Richard H., M. D., Superintendent St. Lawrence State Hospital, Ogdensburg, N. Y.

Kindred, J. Joseph, M. D., President and Consulting Physician River Crest Sanitarium, Astoria, New York City.

Lamb, Robert B., M. D., Supt. Matteawan State Hospital, Fishkill-on-Hudson, N. Y.

Lyons, A. J., M. D., Superintendent Second Hospital for Insane, Spencer, W. Va.

Maxwell, T. O., M. D, First Assistant Physician State Lunatic Asylum, Austin, Texas.

Macdonald, A. E., M. D., 431 Riverside Avenue, Columbia Court, New York City.

Mead, L. C., M. D., Superintendent South Dakota State Hospital for Insane, Yankton, S. D.

Miller, Harry W., M. D., Pathologist and Assistant Physician Taunton Insane Hospital, Taunton, Mass.

Murphy, P. L., M. D., Superintendent The State Hospital at Morganton, Morganton, N. C.

Orth, H. L., M. D., Superintendent Pennsylvania State Lunatic Hospital, Harrisburg, Pa.

Page, Charles W., M. D., Superintendent and Physician Danvers Insane Hospital, Hathorne, Mass.

Palmer, H. L., M. D., Superintendent Utica State Hospital, Utica, N. Y.

Perry, M. L., M. D., Superintendent Parsons State Hospital, Parsons, Kans.

Pilgrim, Charles W., M. D., Superintendent Hudson River State Hospital, Poughkeepsie, N. Y.

Preston, John, M. D., Superintendent State Epileptic Colony, Abiline, Texas.

Punton, John, M. D., Superintendent Punton Sanitarium, Kansas City, Mo.

Redwine, J. S., M. D., Medical Superintendent Eastern Kentucky Hospital for Insane, Lexington, Ky.

Robinson, J. F., M. D., Late Superintendent State Hospital No. 3, Nevada, Mo.

Rogers, Joseph G., M. D., Medical Superintendent Northern Indiana Hospital for Insane, Longcliff, Logansport, Ind.

Searcy, J. T., M. D., Superintendent Alabama Insane Hospitals, Tuscaloosa, Ala.

Smith, G. A., M. D., Superintendent Central Islip State Hospital, Central Islip, L. I., N. Y.

Turner, John S., M. D., Medical Superintendent North Texas Hospital for Insane, Terrell, Texas.

Villeneuve, George, M. D., Medical Superintendent St. Jean de Dieu Hospital for the Insane, P. O. Box 1147, Montreal, Quebec, Canada.

Wade, J. Percy, M. D., Medical Superintendent Maryland Hospital for Insane, Catonsville, Md.

Wallace, D. R., M. D., Waco, Texas.

White, M. J., M. D., Superintendent Milwaukee Hospital for Insane, Box A., Wauwatosa, Wis.

Wilsey, O. J., M. D., Superintendent Long Island Home, Amityville, L. I., N. Y.

Witte, Max E., M. D., Superintendent Clarinda State Hospital, Clarinda, Iowa.

Woodson, C. R., M. D., Superintendent State Hospital No. 2, St. Joseph, Mo.

Work, Hubert, M. D., Superintendent Woodcroft Hospital, Pueblo, Col.

Worsham, B. M., M. D., Superintendent State Lunatic Asylum, Austin, Texas.

The following visitors and guests of the Association registered their names with the Secretary:

Applegate, Mrs. Charles F., Mt. Pleasant, Iowa.
Atkins, Mr. Fred., Fishkill-on-Hudson, N. Y.
Atherton, Mr. Horace H., Trustee Danvers Insane Hospital, Hathorne, Mass., Tangred, Mass.
Beutler, Mrs. W. F., Wauwatosa, Wis.
Breeding, J. E., M. D., San Antonio, Texas.
Burg, S., M. D., City Health Officer, Chief of City Hospital, San Antonio, Texas.
Caples, Mrs. Byron M., Waukesha, Wis.
Crumbacker, Mrs. W. R., Independence, Iowa.
Crumbacker, Mr. J. Bowen, Independence, Iowa.
Daniel, Mrs. F. E., Austin, Texas.
Daniel, F. E., M. D., President State Medical Association and Editor Texas Medical Journal, Austin, Texas.
Daniel, R. P., Hospital Steward City Hospital of San Antonio, Texas.
Dent, Mrs. Emmet C., Ward's Island, New York City.
Drewry, Mrs. W. F., Petersburg, Va.
Hadra, Mr. Frederick, 119 Alamo Plaza, San Antonio, Texas.
Harmon, Mrs. F. W., Cincinnati, Ohio.
Hernert, T. B., M. D., Galt, Mo.
Hill, Chas., M. D., Pine Island, Goodhue Co., Minn.
Hopkinson, Mr. Lemuel W., Trustee Danvers Insane Hospital at Hathorne, Mass., Bradford, Mass.
Hutchings, Mrs. Richard H., Ogdensburg, N. Y.
Jameson, Mrs. Nellie, P. and S. Hospital, San Antonio, Texas.
Kindred, Mrs. John Joseph, 47 E. 58th St., New York City.
Lyons, Mrs. A. J., Spencer, W. Va.
McCormick, C. A., M. D., Chicago, Ill.
McQuaid, Mr. George, *The Daily Express,* San Antonio, Texas.
Punton, Mrs. John, Kansas City, Mo.
Redwine, D. B., Jackson, Ky.
Robinson, Mrs. J. F., Nevada, Mo.
Scott, Mr. J. W., Eudora, Ark.
Smith, Mrs. G. A., Central Islip, N. Y.
Shropshire, L. L., M. D., San Antonio, Texas.
Taylor, C. W., M. D., 18-19 Hicks Building, San Antonio, Texas.
Ryder-Taylor, Mr. Henry, *San Antonio Daily Light,* San Antonio, Texas.
Tipton, Mr. W. E., Secretary State Board Charities and Corrections, Mitchell, S. D.
Turner, Mrs. J. S., Terrell, Texas.
Wallace, Mrs. D. R., Waco, Texas.

White, Mrs. M. J., Wauwatosa, Wis.
Withers, Robert Lee, M. D., Assistant City Physician, City Hospital, San Antonio, Texas.
Wilson, Rev. Homer T., D. D., San Antonio, Texas.

After the registration the Association was again called to order by the President.

THE PRESIDENT. For many years I have held that the memorial notices of deceased members should be read at the beginning of the meetings, as the least we can do to show our regard for our departed brethren. To defer them to the close of the sessions is to show very scant respect to those snatched from our ranks, and very scant courtesy to the writers of the articles. Accordingly, it has been arranged to have the obituaries take precedence of everything else.

Dr. Robert B. Lamb then read an obituary of the late Dr. Henry E. Allison.

THE PRESIDENT.—Personally I had known Dr. Allison a great many years, and while I sometimes differed from him in his conclusions, I certainly have never known a man I thought more thoroughly honest in all that he said and all that he did.

A memorial notice of Dr. James F. Ferguson, prepared by Dr. William E. Dold, was read by Dr. A. W. Hurd.

A memorial notice of Dr. F. Savary Pearce, prepared by Dr. George Stockton, was read by the Secretary.

A memorial notice of Dr. Merrick Bemis, prepared by Dr. Ernest V. Scribner, was read by Dr. H. L. Palmer.

A memorial notice of Dr. George F. Keene, prepared by Dr. Henry A. Jones, was read by Dr. H. W. Miller.

THE PRESIDENT.—As there is still some time left us before luncheon, I will call upon Dr. Hattie to read Dr. Kemp's paper.

Dr. Hattie then read a paper written by Dr. Robert C. Kemp, of New York City, "Some Observations on the Relations of the Gastro-Intestinal Tract to Nervous and Mental Diseases."

The paper was discussed by Dr. Charles G. Hill.

On motion, a vote of thanks was tendered Dr. Kemp for his valuable and interesting paper.

A recess was then taken until 2.30 p. m.

SECOND SESSION.

The meeting was called to order by the President at 2.30 p. m.

THE PRESIDENT.—It has always been customary to have a vote of thanks tendered for the addresses of welcome given us, and certainly that custom should not be omitted to-day, because I think, in all my experience, I never heard better. I will, therefore, call upon Dr. Macdonald to make such a motion.

DR. MACDONALD.—I had it in mind to offer such a resolution this morning, but Dr. Burgess represented the Association so well in his response that I did not do so. As the gentlemen concerned are absent, I will not make any remarks, but simply move that the Secretary be instructed to convey the grateful thanks of this Association to the gentlemen who gave the addresses of welcome this morning. Seconded by Dr. Pilgrim. Carried unanimously.

In the absence of the Vice-President, Dr. Henry M. Hurd was called to the chair and the President then read his address, "The Insane in Canada," which was greeted with much applause.

DR. HURD (in the chair).—The Association is to be congratulated upon this clear-cut and most suggestive address. It has not been customary to discuss the address of the President. I shall be glad, however, to have some one voice the feeling of the Association.

DR. C. G. HILL.—I was going to do so before you made your suggestion. It was evident from the attention given to the President that he touched a chord in the hearts of all here. I move that a vote of thanks be tendered the President for his very interesting and suggestive address. Seconded by Dr. Busey. Carried unanimously.

THE PRESIDENT.—In answer to your commendation of my poor efforts, I will but quote the "Master of Poets" and say: "I can no other answer make but thanks, and thanks, and ever thanks."

Adjournment.

WEDNESDAY, APRIL 19, 10.00 A. M.

The meeting was called to order by the President, who introduced Mr. Wm. L. Stiles, President of the Business Men's Club of San Antonio, as having an announcement to make in behalf of the Committee of Arrangements.

MR. STILES.—We have arranged to entertain you at a Mexican dinner to-morrow night at the Turner Hall, and Dr. Graves extended our invitation yesterday. I thought best, however, to repeat the invitation here because we want to make sure that you are all there. This is an affair to which the ladies also are invited. It is entirely informal; it is not a full-dress affair—in fact, a Mexican blanket would be much more appropriate for a Mexican dinner. We are going to have plenty of hot stuff, and plenty of cold stuff too. We are going to have music, etc., and we hope you will all be there. (Applause.)

THE PRESIDENT.—This beautiful bouquet of roses, which you see on the table before me, was presented to the members of the Association by Mrs. Dr. Breeding.

I will now call upon Dr. Dent, the Secretary, to read the report of the Council, deferred from yesterday.

The Council begs leave to submit the following report to the Association:

At a meeting of the Council held April 17, it was moved by Dr. Drewry, seconded by Dr. Pilgrim that the Council appoint a committee to be known as the "Committee on Programme and Publication," whose duty it shall be to assist the Secretary in procuring papers and arranging the programme for the next annual meeting, and in having the Transactions of the Association printed and published. After full discussion, this was carried. The appointment of the committee was entrusted to the President.

At a meeting held April 18, Dr. Hill moved: "That it be the understanding of this Association that the papers read before it are the property of the Association. With the permission of the Council, the author may be allowed to publish his paper elsewhere, it being understood that in such publication, due credit shall be given to this Association." Seconded by Dr. Turner and after full discussion passed.

The Council recommends the following names for membership:

For Active Membership.—Geo. I. McLeod, M. D., Philadelphia, Pa.; Thomas J. Moher, M. D., Brockville, Ont.; Henry M. Weeks, M. D., Skillman, N. J.

For Associate Membership.—Charles M. Burdick, M. D., Ogdensburg, N. Y.; Jesse C. Coggins, M. D., Catonsville, Md.; Harris May Carey, M. D.,

Retreat, Pa.; R. Edward Garrett, M. D., Catonsville, Md.; George Stimpson Hathaway, M. D., Butler Hospital, Providence, R. I.; DeWitt C. MacClymont, M. D., Kings Park, N. Y.; Charles Belton Macartney, M. D., Flint, Mich.; John Irvine McKelway, M. D., Kings Park, N. Y.; Ethan A. Nevin, M. D., Ogdensburg, N. Y.; George O'Hanlon, M. D., Kings Park, N. Y.; Frederick W. Parsons, M. D., Poughkeepsie, N. Y.; Carlyle A. Porteous, M. D., Montreal, P. Q.; A. L. Skoog, M. D., Parsons, Kans.; Irving Lee Walker, M. D., Central Islip, L. I., N. Y.; Lewis M. Walker, M. D., Harding, Mass.; Edward M. Green, M. D., Milledgeville, Ga.; Geo. M. Kline, M. D., Mt. Pleasant, Iowa.

Report of Treasurer,

in account with the American Medico-Psychological Association, from May 1, 1904, to April 10, 1905.

Receipts.

Balance Last Report	$ 937.69	
Dues from Active Members	1,140.00	
Dues from Associate Members	168.10	
Received from Interest	41.81	
Sale of Transactions	1.00	
Sale of Gummed Lists	.50	
Sale of Blakiston's Autopsies	2.25	
Sale of Desk	12.36	
Total Receipts		$2,303.71

Expenditures.

Clerical Assistance	$ 122.30	
Ballots, Luggage, etc., St. Louis	6.50	
Programmes and Envelopes, St. Louis	20.30	
Expressage	7.92	
Freight	20.40	
Labor and Material for Boxes for Shipping Records	13.19	
Printing	23.88	
Receipt Book	3.75	
Rubber Stamps	1.48	
Mimeograph Supplies	2.60	
Appropriation American Journal of Insanity	150.00	
Total Expenditures	426.82	
Balance to New Account:		
N. Y. Produce Ex. Bank	$1,068.89	
Emigrant Indus. Savings Bank	808.00	
	$1,876.89	
Total		$2,303.71

The expense for freight, crating, etc., was incident to the transfer of records from Flint, Mich., to New York City.

Fifty dollars were paid the American Journal of Insanity on account of appropriation for previous year and $100.00 on the last appropriation of $200.00. The Journal has not yet drawn for the second $100.00 of last year's appropriation.

As the Transactions have not yet been received from the printer, they have not been paid for, which accounts for the large balance.

I would respectfully report that outstanding dues are as follows:

Due from Active Members	$470.00
Due from Associate Members	76.00
Total	$546.00

Respectfully submitted,

E. C. DENT, *Treasurer.*

Upon motion the report was received and referred to the Auditing Committee.

The President then called for the report of the editors of the American Journal of Insanity, which was read by Dr. Henry M. Hurd.

BALTIMORE, April 13, 1905.

TO THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

Gentlemen—At the request of Dr. E. N. Brush, the Managing Editor of the American Journal of Insanity, who is detained from being present at this meeting by an imperative engagement at home, I present herewith a statement of the account of the American Journal of Insanity up to April 12, 1905, which shows a balance of $240.20 on hand. The April number, however, has not been issued, and it is probable that when that is issued, the account of the Journal will be somewhat overdrawn.

In view of this state of things, I can only urge that an effort be made to increase the subscription list of the Journal. Many members of the Association do not take it, and many general practitioners, by a little effort, could be induced to subscribe.

It will also be noticed that the receipts from advertising continually fall off. A determined effort should be made to increase the list of advertisements. Many members of the Association are so situated as to throw advertising into the hands of the Journal, and I would respectfully request them to do so. The Journal has grown in influence and scientific standing steadily for a number of years, and it ought to be self-supporting.

Vouchers for the expenditures are herewith submitted, and I would respectfully request that they be referred to the auditors.

Very respectfully,

HENRY M. HURD.

THE JOHNS HOPKINS PRESS.

STATEMENT OF ACCOUNT OF THE AMERICAN JOURNAL OF INSANITY.

RECEIPTS SINCE LAST STATEMENT.

From subscriptions and sales, including reprints	$1,690.94	
From advertisements (less commissions to agents)	641.64	2,332.58

PAYMENTS SINCE LAST STATEMENT.

1904, May 20, deficit at last statement	62.33	
Friedenwald Co. (printing account) A	621.43	
" " B	400.00	
" " C	279.13	
" " D	441.44	
" " E	5.40	
J. M. Mosher (editorial expense) F	8.25	
Publisher's charges G	200.00	
Postage and express H	70.70	
Miscellaneous expense, stationery, etc. I	3.70	2,092.38
Balance to new account		$ 240.20

1905, April 12.

This statement does not include the cost of No. 4 (April, 1905), not yet issued. This is needed to complete the annual volume.

THE PRESIDENT.—Gentlemen, you have heard Dr. Hurd's report, and I am sure that I voice the sentiments of all when I say, "We are quite satisfied."

Upon motion, the report was referred to the Auditing Committee.

THE PRESIDENT.—I would call your attention to the necessity of our backing up the Journal in every possible way. To me it seems almost a disgrace for any member not to take it. I for one am very proud to have such a valuable production on my private library shelves, and it is the duty of each of us, as stated in the report, to use his utmost efforts to extend the influence of the Journal. I regret that Dr. Hurd should have ceased his active editorship, but I am glad that he remains consulting editor. He is the general in charge of the advance.

DR. MURPHY.—I move that a committee be appointed from the members of the Association to solicit subscriptions from those who are not subscribers and to further the interests of the Journal in every possible way. I know little about it, but if this committee

were appointed, it would tend to relieve the busy editors of this detail of the work. I think it would advance the interests of the Journal to have this committee act in connection with the Committee on Programme and Publication.

DR. HURD.—I would make the suggestion, in order to avoid complication, that the Committee on Programme and Publication be charged with this duty and responsibility.

DR. MURPHY.—I accept the amendment and move that the Publication Committee as appointed by the Council be also the committee to assist the editors of the American Journal of Insanity to further the interests of the Journal in every possible way.

The resolution was adopted.

DR. PAGE.—I move that the Association put on record an expression of appreciation of Dr. Hurd's services as chief editor of the Journal for many years past. I think we all appreciate what he has done for the Journal and for the interests of the Association.

THE PRESIDENT.—It has been moved that a vote of thanks be tendered Dr. Hurd for his services as chief editor of the Journal, and I will add that I never put a motion in my life with greater pleasure. Carried unanimously.

DR. HURD.—I wish to return my sincere thanks for this expression of appreciation from the Association.

THE PRESIDENT.—Prior to balloting the Secretary will read the list of the names which have been recommended by the Council to the Association for active and associate membership.

The Secretary read the list. (This list is given in the report to the Association from the Council.)

Upon motion of Dr. Woodson the Secretary was empowered to cast the ballot of the Association admitting these gentlemen to active and associate membership in the Association respectively.

The Secretary announced that the ballot had been cast and the gentlemen therein named had been duly elected.

THE PRESIDENT.—The ballot having been found favorable, I declare these gentlemen duly elected members of the Association.

DR. PAGE.—I made my motion with reference to Dr. Hurd on the spur of the moment without deliberation and without confer-

ence. Since that motion was passed, I find that there is a general, spontaneous sentiment among the members of this Association that we must do something more than pass a resolution to express our esteem and affection for Dr. Hurd and our appreciation of his services, both in connection with the Journal and the Association. I therefore move that the President appoint a committee of three to obtain and present to Dr. Hurd a suitable testimonial as a token of the esteem with which he is regarded by us all.

DR. MACDONALD.—Mr. President, I heartily second this motion that a committee be appointed to obtain a suitable and fitting testimonial as an expression of our appreciation of Dr. Hurd's untiring efforts for this Association and for the success of the Journal, and as an indication of the esteem with which he is regarded by us all.

The President put the motion and announced that it had been carried unanimously.

THE PRESIDENT.—I will appoint as such committee Dr. Page, of Hathorne, Mass., Dr. Burr, of Flint, Mich., and Dr. Murphy, of Morganton, N. C.

As chairman of the committee empowered to prepare a History of the Association for publication, I can report progress only.

I would ask Dr. Macdonald, as chairman, for the report of the committee appointed at St. Louis to formulate the opinions of the Association on the subject of Dr. Punton's paper, "Are the Insane Responsible for Criminal Acts?"

DR. MACDONALD.—In regard to that committee, I have to report that Dr. Hurd, Dr. Punton, and myself are the only members in attendance at this meeting, and consequently we have not been able to secure a quorum of the committee for a meeting. Under these circumstances, it seems best to us to ask leave to report progress, and also that the committee be continued. It has been suggested that perhaps joint action or consideration might be secured in the matter after conference with the American Bar Association, and I submit this suggestion to the Association for such disposition as may appear proper.

DR. HURD.—We have, I think, only one man in our membership who is both a lawyer and a doctor, who has the degrees of M. D. and LL. B. Consequently I would move that this report be accepted and that Dr. Macdonald be appointed a committee to

confer with the American Bar Association with reference to possible joint action in this matter. Carried.

DR. MACDONALD.—Another matter for report is my attendance, as your representative, upon the meeting of the Executive Committee of the Congress of American Physicians and Surgeons, of which Congress your Association is one of the component parts. I have a long report as to the relations of the Association to the Congress, but inasmuch as the meeting has been postponed and does not come until two years from now, and as the matters involved are somewhat serious, I beg to report progress, and to suggest that it might be well to have a committee of this Association, to consist of the Executive Committee member (myself), the alternate (Dr. Brush), the President of this Association, and two members to be named by the President, to consider the whole subject and report to the Association at its next meeting. I offer a resolution to that effect.

THE PRESIDENT.—Dr. Macdonald has moved that a committee of five, one of whom shall be the President, two others, himself and his alternate on the Executive Committee, Dr. Brush, with two to be appointed by the chair, be entrusted with the consideration of the relations of this Association to the Congress of American Physicians and Surgeons, to report at next meeting. Is it the will of the meeting that this should be done? Carried.

DR. MACDONALD.—I have to report that as the delegate of this Association I attended the meeting of the Pan-American Congress held in Panama during the first week in January. I will not detain you now with a verbal report of the proceedings, but will submit a written report later.

THE PRESIDENT.—In this connection I might read a letter I have received from the 15th International Medical Congress, which meets at Lisbon in 1906.

XV INTERNATIONAL MEDICAL CONGRESS,
AMERICAN COMMITTEE.

March 20, 1905.

T. J. W. BURGESS, M. D.,

President American Medico-Psychological Association,
Montreal, Canada.

Dear Doctor—I am requested by the Committee to ask you to kindly name a member of your Association to prepare a paper for the Fifteenth

International Medical Congress, to be held at Lisbon in 1906; such paper or address to be a representative one of your Association.

Yours very truly,
(Signed) RAMON GUITERAS, M. D.,
Secretary.

It would be in order for some one to suggest a member to represent this Association and prepare a paper for the Congress, as requested.

DR. C. G. HILL.—I move that Dr. Macdonald be appointed to write the paper and to act as our representative at the Congress, as he has so well represented us on other occasions. Carried.

DR. MACDONALD.—I thank the Association for your confidence and kindness in the matter.

The Secretary announced that telegrams or letters expressing regret at inability to attend the meeting and extending greeting had been received from the following:

George Stockton, M. D., Columbus, Ohio; C. B. Burr, M. D., Flint, Mich.; G. Alder Blumer, M. D., Providence, R. I.; T. O. Powell, M. D., Milledgeville, Ga.; B. D. Evans, M. D., Morristown, N. J.; Richard Dewey, M. D., Wauwatosa, Wis.; H. A. Tomlinson, M. D., St. Peter, Minn.; Thomas J. Moher, M. D., Brockville, Ont.; Chas. K. Mills, M. D., Philadelphia; E. V. Scribner, M. D., Worcester, Mass.; Charles G. Wagner, M. D., Binghamton, N. Y.; C. H. Hughes, M. D., St. Louis, Mo.; Bigelow T. Sanborn, M. D., Augusta, Me.; Arthur F. Kilbourne, M. D., Rochester, Minn.; George F. Jelly, M. D., Boston, Mass.; A. B. Howard, M. D., Cleveland, Ohio.

The Secretary stated that accident in the case of Dr. Burr and deaths in the families of Dr. Blumer and Dr. Powell had prevented the attendance of these gentlemen, and that telegrams of condolence had been sent to them.

The President then called for the report of the Nominating Committee.

DR. PILGRIM, Chairman.—The Nominating Committee would respectfully report as follows:

For President, Dr. C. B. Burr, of Michigan.

For Vice-President, Dr. C. G. Hill, of Maryland.

For Secretary and Treasurer, Dr. E. C. Dent, of New York.

For Councilors, Dr. G. A. Smith, of New York; Dr. W. F. Beutler, of Wisconsin; Dr. J. T. Searcy, of Alabama; Dr. N. H. Beemer, of Canada.

To fill vacancy caused by Dr. Hill's election as Vice-President, Dr. M. L. Perry, of Kansas.

For Auditors, Dr. A. W. Hurd, of New York, Dr. W. H. Hancker, of Delaware.

Upon motion the report of the committee was accepted and adopted, and the new officers were declared elected.

THE PRESIDENT.—Prior to listening to the annual address by Dr. Searcy, Dr. Graves has asked me to announce that the ride to the Missions takes place this afternoon, and that carriages will be in front of the Menger at 2.30 sharp. This is perhaps the most interesting item in the list of interesting things provided for our entertainment, and I would impress it upon all, but upon the ladies especially, the necessity to be on hand promptly, as the ride is a long one. Dr. Graves also asks that the members who contemplate going to Mexico give him their names, and the names of ladies accompanying them, as soon as possible, that he may make the necessary arrangements with the railroad company for accommodation.

I now have the pleasure of introducing Dr. James T. Searcy, of Tuscaloosa, Alabama, who will deliver the annual address.

DR. SEARCY.—I have been very much embarrassed by the fact since I first received notice that I was to give this annual address. I have selected as my subject "Tripartite Mentality." I know this is a very unsual title, and, with considerable hesitancy, I recognize also that my presentation of the subject contains a great deal of a venturesome character. I hope, however, that it will explain itself satisfactorily as I proceed. One thing I think I can say is that you will not find it in the text-books. (Reads address.)

DR. ROGERS.—I rise to express what I have no doubt is the sense of the Association, that the address which has just been read is certainly worthy of an expression of appreciation on the part of the Association. I move that a vote of thanks be tendered Dr. Searcy for this very interesting and thoughtful address.

Seconded by Dr. Turner. Carried unanimously.

THE PRESIDENT.—Dr. Searcy, I take great pleasure in tendering you this vote of thanks.

THE PRESIDENT.—As Dr. Witte wishes to get away to-morrow morning, if there is no objection, we will change the order of the programme and listen to his paper now.

Dr. Witte then read a paper, "As to Surgery for the Relief of the Insane Condition."

Discussed by Drs. Woodson, Crumbacker, Robinson, Hutchings, Punton, Page, and H. M. Hurd.

THE PRESIDENT.—Dr. Graves wishes to make an announcement.

DR. GRAVES.—As chairman of the Committee of Arrangements, I have been requested by a number of gentlemen to see if we could arrange for the drive and luncheon for the ladies on Thursday instead of Friday as originally planned. This is given through the courtesy of Mrs. Dr. Frank Paschal, and she has very kindly consented to this change of date, and I will ask the gentlemen to kindly notify the ladies to be ready at 10.00 sharp Thursday morning. This is to accommodate those who wish to go to Mexico Friday morning instead of Friday night. The train accommodations are the same. This will enable you to reach Mexico Saturday night. It is desirable that all the members who are going, and I have reserved sleeper accommodations for all who have given me their names, shall go to the I. & G. N. ticket office for their tickets, and also for an exchange of American money for Mexican money. You can make the exchange here or anywhere. If it is the desire of all the members to go Friday morning, and if you can notify me to that effect, I will be glad to have sleeper arrangements made for Friday morning.

Adjournment.

MENGER HOTEL, APRIL 20, 1905.

The meeting was called to order at 10.00 a. m., by the President, who asked for the report of the Auditing Committee.

MENGER HOTEL, SAN ANTONIO, TEXAS, April 20, 1905.

To the American Medico-Psychological Association:

Your Auditing Committee would respectfully report that they have examined the books and vouchers of the Treasurer and compared them with the report submitted by him to the Association showing a balance of $1,068.89 in the New York Produce Exchange Bank and a balance of $808.00 in the Emigrant Industrial Savings Bank, a total balance of $1,876.89, and found the same correct as read.

We would also report that we have examined the report and vouchers submitted by the Editors of the American Journal of Insanity and found the report correct as submitted.

ARTHUR W. HURD,
W. H. HANCKER,
Auditors.

On motion the report was placed on file.

The report of the Council was then read by the Secretary. Three gentlemen, Drs. David Alexander Shirres, Montreal, P. Q.; T. O. Maxwell, Austin, Tex., and Wilmer S. Allison, San Antonio, Tex., were recommended to the Association for associate membership, and on motion the Secretary was instructed to cast a ballot for their election.

The Secretary announced that the ballot had been cast and found favorable. They were accordingly declared elected.

The Council also reported that it had selected St. Paul, Minn., or St. Paul and Minneapolis combined, as the place for the next meeting of the Association, and announced that it had been decided to combine the programmes for Thursday and Friday in order to complete the meeting of the Association on Thursday.

THE PRESIDENT.—With reference to the appointment of a committee to confer and report regarding our relations with the Congress of American Physicians and Surgeons, it seems to me that, as the thing is a serious matter, the whole country should be represented on that committee. I will, therefore, in addition to Dr. Macdonald, Chairman, and Dr. Brush, alternate, appoint myself for Canada, as required by Dr. Macdonald's motion, Dr. Work for the West, and Dr. Worsham for the South.

Before proceeding with the programme, I could say that it will be necessary to enforce the rule limiting the time for the reading of papers to twenty minutes and for discussion to five minutes. Otherwise we will not be able to get through to-day.

Dr. H. L. Palmer then read the paper, "The Prevention of Insanity in its Incubation by the General Practitioner," by Dr. J. T. W. Rowe, New York. Discussed by Dr. C. G. Hill and the President.

The President then called for Dr. Wallace's address.

DR. D. R. WALLACE.—

Gentlemen of the American Medico-Psychological Association:

I do not know, gentlemen, that I have anything worth the saying under the circumstances. Our good brother, Dr. Osler, our Anthropological Philosopher, I believe, did not interdict the privilege of the old man to be garrulous.

Standing before this body, I am reminded of the great dramatist's words:

"When to the sessions of sweet, silent thought,
I summon up the remembrance of things past."

Truly in the light of other days, I see myself a generation ago in the city of Nashville, Tenn., when and where I looked in upon for the first time and became a member of this body, not then known as the American Medico-Psychological Association, but as the Association of Superintendents of American Institutions for the Insane. To say that I was surprised with the personnel of the body would be expressing it very mildly. A generation before that time I had looked in upon the American Congress. For years I had been accustomed to attending the American Medical Association, and it occurred to me as soon as I looked over the body of men composing the American Medico-Psychological Association that it sustained about the same relation to the American Medical Association as the Senate does to the House of Representatives of the American Congress. Take out a few men that you could count on your fingers, such men as Benton, Cass, William H. Seward—neither Clay, Webster, nor Calhoun—I think the personnel of this body—that is the American Medico-Psychological Association, would compare very favorably at that time with the United States Senate. The impression made on me was that I had never seen as fine a body of men together.

The Comptons of Mississippi, Callender of Tennessee, Bryce of Alabama, Green of Georgia, Fuller and Grissom of North Carolina, Stribling of Virginia, Nichols of the Government Hospital for Insane at Washington, Kirkbride, Isaac Ray, and Curwen of Pennsylvania, the Macdonalds, Brown, and Gray of New York—I am glad one of them is here, though he was not present at Nashville—my good old friend Orpheus Everts of Indiana, Webb, a brother of Mrs. President Hayes, and Gundry of Ohio—I am sure I never looked into the faces of a finer body of men. I was astonished how such a body of men got together. There were only two ordinary looking men in the body, as I now recollect—one of the two was Isaac Ray, perhaps the most talented, and myself, the least of all of them. It is sad to reflect that there is not a single one of them now living. I was at that time about fifty years old and about as old as a bigger part of the body. Sad, these gentlemen all gone, "Precious friends hid in death's fadeless night." Why I should have been spared to survive so many noble men—what good I have done or am doing—I do not see.

When my dear, good friend, Dr. Graves, invited me to deliver the general

lecture upon this occasion, I replied that I learned from an old teacher, when a boy, Flaccus Horace:

"Sumite, materiam vestris, qui scribitis, aequam
Viribus et versate diu, quid ferre recusent
Quid valeant, humeri."

From a very much younger authority, Thomas Jefferson, whose memorial edition I have just been looking over, in a letter inclosing his resignation of the American Philosophical Society, which he founded thirty years previous, as you know, I find these words:

"Nothing is more incumbent on an old man than to know when he should get out of the way and relinquish to younger successors duties he can no longer perform and honors he can no longer deserve."

I hold in my hand a time-stained paper written eighteen or twenty years ago. I would like to read some extracts from it, though as time is pressing, I believe I will not do so. I thought it was a paper of some importance at the time; I see now it is very foolish. However, I leave it with you to make such disposition with it as you may desire. I presume there are others present who would like to occupy the time.

THE PRESIDENT.—Gentlemen, if the garrulousness of old age were always akin to that of Dr. Wallace, I am sure we would all say that Dr. Osler is away, away out. I hope that if I ever attain to Dr. Wallace's age, I will not be less a disgrace than he is to the Association.

Dr. A. W. Hurd then read his paper, "Korsakoff's Psychosis." Discussed by Dr. Miller.

"The Therapeutic and Medico-Legal Features of Drug Addictions," by George P. Sprague, M. D., Lexington, Ky. Read by title.

"Melancholia, the Psychical Expression of Organic Fear," by J. W. Wherry, M. D., Dansville, N. Y. Read by title.

"Mysophobia, with Report of Case," by John Punton, M. D., Kansas City, Mo. Read by the author. Discussed by Drs. Turner, H. M. Hurd, Woodson, and G. H. Hill.

"Cholaemia; Its Relations to Insanity," by R. J. Preston, M. D., Marion, Va. Read by title.

"A Case of Huntingdon's Chorea," by Harry W. Miller, M. D., Taunton, Mass. Read by the author. Discussed by Drs. A. W. Hurd, Punton, C. G. Hill, H. M. Hurd, the President, and H. W. Miller in conclusion.

"The Liver and its Relations to Mental and Nervous Diseases," by Charles G. Hill, M. D., Baltimore, Md. Read by the author.

THE PRESIDENT.—As it is nearly time for luncheon, I think we had better defer discussion of this interesting paper until the afternoon. I would like, however, to ask Dr. Hill one question before we adjourn. He has suggested that William Shakespeare should have been a member of the American Medico-Psychological Association and I would ask him if he thinks Shakespeare considered biliousness and melancholia as always proceeding from the liver. In his "Twelfth Night" he says:

> "She never told her love,
> But let concealment, like a worm i' the bud,
> Feed on her damask cheek; she pined in thought;
> And, with a green and yellow melancholy,
> She sat, like patience on a monument,
> Smiling at grief."

Here is a clear case of biliousness and melancholia, and the question is, did Shakespeare regard this young lady as suffering from liver or heart disease?

DR. HILL.—I will answer later.

A recess until 2.30 p. m. was then announced by the President.

The President called the meeting to order promptly at 2.30 p. m.

A communication from R. H. Allen, Secretary of the International Pure Food Congress, asking that the Association pass a resolution urging Congress to enact a law to control the adulteration and misbranding of all products intended for human consumption, was read by the President.

Upon motion, this matter was referred to the Council with full power to act.

The President announced that Dr. Dent, the Secretary, had asked permission to add Dr. Drewry's name to the Committee on Programme and Publication. The request was granted by unanimous consent.

DR. MURPHY.—I move that we elect Dr. D. R. Wallace an honorary member of this Association. He is ex-superintendent of the hospital at Austin and also the hospital at Terrell. In his time he was an honored member of this Association. He is now eighty years of age, and I think it fitting that the Association render him this honor.

DR. H. M. HURD.—I am very glad, Mr. President, to second this motion.

Dr. Wallace was elected unanimously.

"A Case of Visual Hallucinations and Crossed Amblyopia with Vascular and Degenerative Lesions in the Calcerine Cortex and Other Portions of the Occipital Lobe; also with Atrophy of the Pregeniculæ and Optic Tracts," by Chas. K. Mills, M. D., and C. D. Camp, M. D., was read by Byron M. Caples, M. D.

"Observations on Some Recent Surgical Cases in the Manhattan State Hospital, East," by John R. Knapp, M. D., Ward's Island, N. Y. Read by J. Percy Wade, M. D.

The President announced that discussion of Dr. Knapp's paper would be deferred until Dr. Broun's paper was read, so that both could be discussed together, as each dealt with surgery for the insane.

"A Preliminary Report of the Gynecological Surgery in the Manhattan State Hospital, West," by Le Roy Broun, M. D., New York City, was read by Robert B. Lamb, M. D.

The papers of Drs. Knapp and Broun were discussed by Drs. H. M. Hurd, Hutchings, G. H. Hill, Woodson, Dent, Punton, and the President.

"Tuberculosis Among the Insane," by C. Floyd Haviland, M. D., Ward's Island, New York City. Read by Dr. Hutchings. Discussed by Dr. A. E. Macdonald.

"Masked Epilepsy," by Gershom M. Hill, M. D. Read by the author. Discussed by Drs. Crumbacker and Punton.

"Epilepsy as a Symptom," Everett Flood, M. D., read by title.

DR. WOODSON.—I desire to offer the following resolution:

"Resolved, That this Association extend a vote of thanks to the Committee on Arrangements, to Dr. Graves, the Board of Managers, staff, and officers of the Southwestern Insane Asylum, the Business Men's Club, the Mayor, the Bexar County Medical Association, the State Medical Association, Dr. Moody, Mrs. Frank Paschal, the ladies, the press of San Antonio, and the managers of the Menger Hotel for their many courtesies and for the hospitality extended to this Association in this beautiful city of the Southwest."

DR. C. G. HILL.—I think the resolution meets with our hearty response, and anything we could say to intensify and add expression to what we feel would almost be superfluous. We feel more than we can express. We can never forget such hospitality as we have enjoyed in this place.

THE PRESIDENT.—I think that if we all live to be centenarians, we will never experience more genial and true hospitality than we have experienced here at San Antonio.

The resolution offered by Dr. Woodson was then adopted unanimously.

THE PRESIDENT.—Before retiring from the office your kindness bestowed on me, I wish to thank you for the patience and forbearance you have shown to me in the discharge of my duties, and to express the hope that you will extend to the new President a like encouragement and kindness. With all my heart I wish he were here that I might call on him to take the chair and close the meeting as is customary. To introduce him to you would be unnecessary, because, as Secretary, he has so long occupied a seat on the dais at our annual gatherings that he is known to all. To attempt to describe Dr. Burr's qualifications for the occupancy of the presidential chair would be highly impertinent on my part. I shall, therefore, only say that I feel a pleasure in vacating this office in favor of one so well fitted to fill it worthily.

I now declare this meeting adjourned to assemble next year at St. Paul, or St. Paul and Minneapolis combined, at a time to be fixed by the Committee of Arrangements, of which all shall have due notice.

Notes and Comment

THE SAN ANTONIO MEETING OF THE ASSOCIATION.—When the announcement was made last year at St. Louis that the next meeting of the Medico-Psychological Association would occur at San Antonio, certain misgivings were felt by many members lest the distance of the proposed place of meeting from the homes of those who usually attend might preclude a satisfactory annual gathering. Time, however, has justified the wisdom of the selection and the movement of the Association towards the southwestern boundary of the United States has demonstrated that the organization is national in character, possessing members public-spirited and self-sacrificing enough to spend time and money to visit any part of our broad country. The sessions of the Association were well-attended and the papers and discussions proved interesting and profitable to all. Several interesting and valuable papers were read in the absence of their authors by the Secretary or other friends, and the absence of the authors did not prevent animated discussions. In some instances the views thus presented were controverted with considerable vigor by those who discussed them. It is possible that if the authors of papers thus read *in absentia* had been present they would have welcomed the opportunity to defend them from criticisms. Their friends, however, who did battle for their views labored under many difficulties and were upon the whole worsted in the encounter. This was notably true when Dr. Le Roy Broun's paper on gynecological surgery was read. The effect of the discussion was to place gynecological surgery among the insane upon a broader foundation than the gynecological specialist seems to assign to it. Several papers were of marked ability and attracted close attention. Among them may be mentioned Dr. Witte's, "As to Surgery for the Relief of the Insane Condition," Dr. Punton's on "Mysophobia," Dr. H. W. Miller's on "Huntingdon's Chorea," Dr. C. G. Hill's "The Liver in its Relations to

Mental and Nervous Diseases," Dr. A. W. Hurd's on "Korsakoff's Psychosis," and Dr. Searcy's "Tripartite Mentality." The Presidential Address by Dr. Burgess was a scholarly and able production, clothed in good English and attractively presented. Not the least attractive features of the occasion were the various addresses of welcome on the part of the medical profession and the citizens of San Antonio. Their perusal in the "Proceedings" upon another page will scarcely convince the reader that while the art of oratory may decline in the halls of Congress or Courts of law, it still remains vigorous in Texas, and its practice is not restricted to the legal profession. There must be something in the atmosphere of the broad plains of the Lone Star State which fosters affluence of diction and exuberance of fancy. We should regret to learn of its decline.

The hospitality of the people of San Antonio was cordial and was shown on all occasions both in public and private. The medical profession tendered a very enjoyable drive to all members and gave a rare opportunity to visit the old Spanish missions in the vicinity of the city. A Mexican supper with unpronounceable and indescribable dishes was given by the business men of San Antonio, followed by much delightful speech-making and characterized throughout by cordial good-will. A reception and musicale at the Southwestern Hospital for the Insane was also given by Dr. Graves, assisted by many charming women and cultivated men. In addition to these public attentions the ladies of the party received special rides and receptions and enjoyed much private hospitality. In the experience of the Association the warm-hearted welcome of the citizens of San Antonio had never been surpassed. The San Antonio meeting passes into history as one of the most enjoyable meetings of the American Medico-Psychological Association.

THE FIFTEENTH INTERNATIONAL CONGRESS OF MEDICINE.—The next International Congress of Medicine will be held at Lisbon, April 19 to 26, 1906. Dr. A. E. Macdonald, as will be learned from the proceedings of the American Medico-Psychological Association published in this number, has been delegated to represent this body at the Congress.

The Congress will be divided into seventeen sections, the sev-

enth section being devoted to Neurology, Psychiatry, and Criminal Anthropology.

Among the topics selected for discussion at this section are the following:

Penal reform from the anthropologic and psychiatric point of view.

Forms and pathogenesis of dementia præcox.

The relations of progressive muscular atrophy to Charcot's disease.

Cerebral localization in mental disease.

Education and crime.

Stigmata of degeneration and crime.

Members of the Association desiring further information concerning the Congress, can obtain the same by addressing the Secretary of the American Committee, Dr. Ramon Guiteras, 75 West 55th Street, New York.

FIRST BELGIAN CONGRESS OF NEUROLOGY AND PSYCHIATRY.—The first Belgian Congress of neurology and psychiatry will be held at Liège, September 28-30, 1905. The secretary of the congress is Dr. Massaut, 19 Boulevard Defontaine, Charleroi, to whom the subscription, ten francs, should be sent by those desiring to become members. Three addresses will be made. That on psychiatry by M. Cuylits, physician-in-chief to the asylum at Evere is entitled, Work considered as a Therapeutic Agent. That on Neurology by M. de Buck, physician-in-chief to the Asylum at Froidmont, and M. Ley, director of the School of Instruction at Antwerp, entitled Lumbar Puncture from a Therapeutic and Diagnostic Viewpoint. On Psychology an address will be made by Mlle. Ioteyko, chief of the Laboratory of Psychology of the University of Brussels, entitled The Sense of Pain. Besides the above various papers will be read. The work of the Belgian alienists and neurologists is of such excellence as to insure the success of their first congress and they have our wishes that its success will exceed all expectation.

NEW BRAZILIAN JOURNAL OF PSYCHIATRY.—The *Archivos Brasileiros de Psychiatria Neurologia e Sciencias Affins,* a quarterly journal published in Rio de Janeiro makes its appear-

ance with the April number. Its editors are Drs. Juliano Moreira and Afranio Peixoto, and the journal is printed and published at the Hospicio Nacional de Alienados. The contents include six original papers, a translation from Kræpelin, four pages of abstracts, and several examples of verse writing by paranoid dements, comprising in all one hundred and thirty-eight pages.

The journal makes an attractive appearance. We are glad to welcome this new publication to our list of exchanges, and congratulate its editors upon the success of their initial effort. We trust that the publication may have an extended and useful career.

PRIZES OF THE BELGIAN ROYAL ACADEMY OF MEDICINE.—The Académie Royale de Médicine de Belgique announces a list of prizes offered for the best theses upon the following subjects:

A prize of 1000 francs for the best thesis based upon original research on the "Significance of neuronophagia in different parts of the nervous system." For this prize all competing essays must be handed in by December 15, 1905.

A prize of 1000 francs for the best thesis on "The medico-legal aspects of the simulation of trauma and of the neuroses, and the best mode of detection." For this the contest closes July 1, 1906.

The Alvarenga prize of 800 francs is awarded on any work which the judges shall deem worthy of the prize, the subject to be chosen by the author. Essays in competition for this prize must be handed in by January 15, 1906.

A prize of 10,000 francs is offered for the best thesis on the pathogenesis and therapeutics of nervous diseases, especially of epilepsy. For this prize the competition closes on December 15, 1905.

A further prize of 25,000 francs is offered for a "cure for epilepsy." The thesis must be legibly written in Latin, French, or Flemish and addressed, post-paid, to the Secretary of the Academy, Dr. E. Masoin, Palais des Académies, Brussels, from whom further information if desired may be obtained.

STUDY OF THE MENTAL PHENOMENA CONNECTED WITH ANÆSTHESIA.—Dr. Joseph Jastrow, Professor of Psychology in the

University of Wisconsin, desires to investigate the mental phenomena connected with anæsthesia and has issued a circular letter, setting forth the lines along which he wishes to follow the investigation, and inviting the assistance and coöperation of surgeons and anæsthetizers.

The opportunities for investigations of this kind in hospitals for the insane are not frequent, but operations under anæsthesia are occasionally necessary, and, nowhere should there be men better trained for observing and recording the data desired by Professor Jastrow. The subject is not one which has hitherto been systematically studied and we believe observations of much value can be made, if carefully and intelligently undertaken.

We ask for Professor Jastrow the encouragement and support of our readers, in a study which will be of value to psychiatry. The complete text of his circular letter is published in the pages devoted to correspondence.

MOREL'S SUPPOSED RULE OF DEGENERACY, A CURIOUS AND PERSISTENT MISQUOTATION.—In 1857 Morel of Rouen published his well-known and now classical work entitled "Traité des Dégénérescences Physiques Intellectuelles et Morales de L'Espèce Humaine."

On page one hundred and twenty-three he gives the history of a patient who came under his observation at the age of eighteen and traces with some detail the family history, as far as relates to his father, grandfather, and great-grandfather. He sums up on page one hundred and twenty-five as follows:

"First generation.—Immorality, depravity, alcoholic excesses, moral debasement.

"Second generation.—Hereditary drunkenness, maniacal attacks, general paralysis.

"Third generation.—Sobriety, hypochondriac and lypomaniac tendencies, systematized ideas of persecution, homicidal tendencies.

"Fourth generation.—(The patient in question) Poorly developed intelligence, maniacal attacks, stupor, transition to idiocy, probable extinction of the race."

Nowhere that we can find after a careful search does the author intimate that he cites these four stages in the physical,

intellectual, and moral decadence of this family as a law or rule of degeneration, and yet down to the present day the summing up of the family history which we have quoted above has been referred to by medical writers as Morel's "law," "scheme," "plan," or "rule," often with footnote reference to the title of the work.

Several years ago we came across these four stages quoted as Morel's scheme of hereditary degeneracy. It appeared at once that a writer of Morel's reputation would hesitate before promulgating such an arbitrary system or rule, and reference to the original source at once revealed the fact that the writer making the quotation had not followed the wise dictum, verify your references; that he had in other words copied the error of some other writer.

The matter did not again come under notice until recently, when observing the error repeated in a text-book on insanity lately issued, we had the curiosity to examine other recent publications. Four works on insanity issued within the past five years, and one work on degeneracy refer to Morel's law or rule and quote the epitomized family history in its four stages; some in detail, others briefly paraphrasing the four periods, but all crediting Morel with publishing something, than which nothing could have been more foreign to his views.

It is clear that each of these authors, one a countryman of Morel, another a German, the others American writers, have been misled by some careless writer or equally careless quoter, and that they in turn have carelessly neglected to consult the original source.

Some authors fall easily into the habit of borrowing other writers' references, sometimes with a perfectly honest intention, desiring to give their readers an opportunity of following, if they desire, the literature of their subject; sometimes with the obvious intention of padding, or of appearing deeply read. The wide reputation, extensive acquaintance with the literature of psychiatry, and scholarly attainments of the authors of the works to which we have referred, forbid any thought but that they have trusted some other author too well, but not wisely.

An error of this kind, however, repeated by five well-known writers, can but throw doubt upon much that is published either as footnote references, or in the form of a concluding bibliography.

It is easy for those not having the opportunities to consult works at first hand, enjoyed by some, and to an excellent degree by the very authors who have misquoted Morel, to rely upon some previous writer for references to inaccessible works; and by changing the quotation slightly, and abbreviating the title in the footnote, detection does not follow. Such writers, however, do not count upon the source from which they borrow being polluted, or upon the occasional occurrence of typographical errors, which when servilely followed betray the plagiarist. Judicious reference to the work of others, wise and telling quotations from their literary productions, may well serve to illustrate a point or confirm or strengthen a statement; but reference and quotation can only be judicious when made from the original and with a clear conception of the meaning of the quotation and its bearing upon the text with which it is incorporated. The only safe departure from this is, if a quotation must be borrowed, to give the source from which it is taken, which fixes the responsibility for any error which the borrowed reference may contain.

Correspondence

NOTE ON THE MECHANICAL IRRITABILITY OF THE FACIAL NERVE IN DEMENTIA PRÆCOX.

Editors American Journal of Insanity:

In 1902, in a report of a case of dementia præcox, published in the American Journal of Medical Sciences, Vol. XXXIII, p. 109, I mentioned among other symptoms that the patient showed marked mechanical irritability of the facial nerve. Later in the same year in a paper entitled Some Points in the Diagnosis of Dementia Præcox, published simultaneously in American Medicine and in the American Journal of Insanity, I drew attention to the diagnostic importance of this symptom. In this I stated: "As yet I do not feel that I have investigated this phenomenon sufficiently to make any very positive assertions concerning it. It is not present in all cases, and sometimes when I have most expected to find it, it has been absent. It seems to be most pronounced in the later stages and unless pretty constantly present as an early symptom will not prove of much value from a diagnostic standpoint. So far I have been able to obtain it in most but not in all early cases. Later I hope to obtain more conclusive data, and meanwhile I should be very glad if others would investigate this phenomenon and would publish their results, or communicate the same to me."

Not long after this, in conversation with Dr. D. J. McCarthy, he drew my attention to the fact that this symptom was often found in cases who had indulged in excess of tobacco or alcohol, and he therefore believed it to be frequently toxic in origin. I was subsequently able to confirm this opinion and from further observations I believe that in my paper I gave undue prominence to this symptom, and that it must simply be considered in connection with the exaggeration of other reflexes and the hypertonic condition of the muscles, as probably a toxic condition. It must be remembered that the physical signs of dementia præcox are

multiform and it is usually a mistake to give undue prominence to any one symptom, which mistake I believe I made in my paper. The general hypertonus of the muscle as shown by the exaggerated tendon reflexes and resistance to passive movements like the mechanical irritability of the facial are probably all indications of a toxic condition which is the cause of the dementing process. That dementia præcox is the result of a toxic condition has been the opinion of several writers for a number of years.

It had been my intention to publish this note earlier, but as no one seemed to attach any special importance to the diagnostic value of the mechanical irritability of the facial but myself, I allowed the matter to rest. However, having recently noticed that Dr. Daniel R. Brower in a paper in the *Alienist and Neurologist* for May, 1905, mentioned this symptom, quoting me, I have thought best to give my later opinion on this point.

WILLIAM RUSH DUNTON, JR.

Sheppard and Enoch Pratt Hospital.

AN INQUIRY IN REGARD TO MENTAL PHENOMENA CONNECTED WITH ANESTHESIA.

Editors American Journal of Insanity:

While in the deeper stages of anesthesia mental processes are usually so entirely submerged as to fall beyond the possibility of record, in the lighter stages and in the period of approach to, and most favorably of all, in the period of recovery from more complete anesthesia, the power of response to outward stumuli is sufficient to afford ample opportunity for a series of observations which furnish the motive to the present inquiry. The cooperation of surgeons and anesthetizers is invited to secure data that bear upon any of the questions summarized below, or upon the general problem thus suggested. Special attention is directed to the importance of tracing relations between the phenomena recorded during anesthesia and normal, waking, mental traits of the subject. Indeed, the former can in many cases be interpreted only in the light of the latter; and observations become of value

in proportion as the subject is able to account for the mental experiences of the unusual state by references to the normal source and trend of his mental processes. To determine these, skilful questioning controlled, where possible, by ingenious tests, will be the most effective instrument of inquiry.

1. *Analogies between the Lighter States of Anesthesia and Hypnosis.*—Of these the chief trait is increased suggestibility: Will the patient carry out automatically with enfeebled consciousness suggestions given by the operator to do thus and so, to feel or neglect certain sensations, to follow a train of thought, to carry out a code of signals between subject and operator? Is obedience to such suggestions apparent by facial expressions, involuntary cries, nods, etc., after more controlled forms of reaction have disappeared? Is there evidence that patients respond to similar suggestions not directly addressed to them? Do they react to the conversation of the attendants, to a vague knowledge of their surroundings, to interpretations, correct or incorrect, of what is actually going on? Are there any of these responses that reflect the normal habits, idiosyncrasies, etc., of the waking condition? Do they belong to the experiences immediately preceding or to a more remote past?

Next in importance are the automatic activities. Illustrations are desired of automatic talking, mechanical acts, and simple tricks of manner, of the type so common in sleeping persons who walk and talk in their sleep, answer questions without awakening, make movements as of knitting, counting money, etc., or other betrayal of their subconscious thought. In very favorable instances it may be possible to place a pencil in the patient's hand and secure by questioning a subconscious answer or scribble or drawing that throws interesting light upon what is going on in the mind, even when there is but partial consciousness of surroundings or direction of mental processes. Such observations have especial value and should be accompanied by the actual records.

2. *Analogies between the Lighter States of Anesthesia and Dream Life.*—If the patient be questioned as to what occupied his mind up to the moment of losing consciousness and again during the regaining of full consciousness, there will inevitably result a valuable collection of data regarding the waning and waxing

states of consciousness. Many of these phenomena will be dream-like, and should, like dreams, be recorded with ample detail to make them intelligible. The nature of the impressions, whether visual or auditory, acted or felt, and most of all, the connections between the dreams and the recent or remote experiences of waking are important items. Just as ordinary dreams become interesting when they are connected with normal experiences, so in the dreams of anesthesia the patient alone can give adequate personal detail to give significance to the narrative.

3. *Other Points of Interest.*—The specific points enumerated are intended to make the matter definite rather than to limit the scope of the inquiry. Evidence is desired that bears in any degree of pertinence upon the general problem thus suggested. As additional points of interest may be mentioned the following: In cases of repeated anesthesia, after rather brief intervals, is it possible to elicit evidence that in the approaching or receding consciousness, details are remembered (or recallable by suggestion) which though beyond the control of the waking consciousness, are shown to connect one state of abnormal consciousness with another similarly caused? The analogous fact is that in hypnosis the subject will tell in a second hypnotization what happened while he was formerly hypnotized, but cannot recall in the waking interval; or again, in changes of personality the relapse into the altered personality will bring with it the control of memories of the last states of abnormal personality, which were not recallable in the normal state. Dreams and the actions of drugs show similar phenomena. Where records of this kind are available through anesthesia, they should be recorded in detail, and a conclusive set of questioning and tests be made to elicit how far the two states are connected.

A further point of interest is the correlation of different types of mental states with different degrees of anesthesia. For this purpose it is desirable that some physiologic sign of the degree of anesthesia be recorded as evidence in general of the depth of anesthesia during which the mental phenomena were observed. The variations of susceptibility to an anesthetic are such as to make it important to estimate the susceptibility in each case, as well as to give such general data as the age, sex, occupation, condition in life, physical state, temperament, purpose for which the

anesthetic was administered, length of period under its influence, degree of nervous shock accompanying the same, and so on.

The general use to which the data will be placed will be that of formulating a consistent account and interpretation of the range of subconscious mental states, including simple states of distraction, absentmindedness, reverie, trance, hypnosis, dreams, the actions of drugs, alterations of personality, lapses of memory, states of confusion, and the reactions to anesthetics. It is hoped that a sufficient series of data will be elicited by the present inquiry to throw important light upon processes as yet imperfectly understood, and the analogies of which to such artificially induced states as those accompanying anesthesia are of especial importance. The psychologist has naturally but little opportunity to observe these phenomena, and must thus appeal to those who are professionally engaged in their production, to step aside from their main interests to supply in a spirit of cooperation the data so valuable to students of a different and yet not unrelated science.

Full credit will be given to all contributions, and no direct or personal use will be made thereof in print without distinct permission. Those to whom this circular letter is addressed are hereby invited to send records of such observations and to further the purposes of this inquiry in such ways as may lie in their power. The undersigned will appreciate, both personally and professionaly, favorable action upon this request.

Madison, Wis. JOSEPH JASTROW.

The University of Wisconsin: Department of Psychology.

Abstracts and Extracts

De la longue durée de certains cas de paralysie générale; des remissions qui survienment dans cette maladie; à propos d'un cas personnel. Par Drs. Chardon et Raviart. L'Écho Médical du Nord, An. IX, p. 229, 14 Mai, 1905.

The authors begin with observations upon the variable duration of paresis and refer to a number of cases of unusual duration which have been reported by other writers, several cases having lived for twenty years or longer after the first symptoms have been observed. It is in these cases that remissions are usually observed.

The author discusses the subject of remissions at length and presents the following summary:

Incomplete or false remissions.—Transitory form, frequent; prolonged form, in both the chronic and circular type, rare.

Complete or true remissions.—Transitory form, rare; prolonged form, rare; definite recoveries, very rare.

A statistical study of three hundred paretics who have been under observation at the asylum at Armentières was made and it was found that 98 per cent died less than five years after their entrance into the asylum, demonstrating the fact that as a rule paresis runs a fairly rapid course. One case is referred to (previously reported by Keraval) which was admitted in February, 1881, in the third stage and who after a long remission died in May, 1901. An abstract of another case concludes the paper. The patient was a man, aged thirty-three years, admitted in December, 1890, showing physical and mental symptoms of paresis. In April, 1891, he was removed by his wife, but was readmitted in March, 1892. Both his physical and mental condition improved so that for twelve years despite his mental impairment he was regularly occupied in useful employment, finally dying of broncho-pneumonia after an attack of influenza. W. R. D.

Relations cliniques de la cécité avec la paralysie générale et le tabes. Par André Léri. Journal de Neurologie, An. X, p. 122, 5 Avril, 1905.

The author is a pupil of Pierre Marie and this study has been made under the latter's auspices. He endeavors to reach a conclusion concerning the assertion that blindness is frequently associated with tabes, and that it is rarely found in cases of general paralysis. He endeavors to decide the

matter and has made a study which is necessarily more or less statistical. From the article we abstract the following conclusions:

Blindness is rare in undoubted general paralysis, but slight changes in the visual apparatus are not uncommon, and blindness is quite frequently a premonitory initial or early symptom of the disease.

In undoubted tabes blindness occurs rarely when the disease has reached its climax, but slight disorders of the visual apparatus are not rare during the period of evolution, and dimness of vision is often found at varying intervals after the other signs of the disease are present.

It may be said then that blindness is associated with general paralysis quite as often as with tabes, but in the former is apt to be an early symptom, and in the latter a late one. It is caused by a localization of the pathological process in the optic tracts, being spinal in tabes and cortical in general paralysis. The reasons for this election of location are discussed and the probable effect on the character and mentality of the patient is dwelt upon. The paper is well worth perusal. W. R. D.

Les cellules plasmatiques de la paralysie générale. Par D. DE BUCK. Journal de Neurologie, An. X, p. 101, 20 Mars, 1905.

The author first briefly discusses the views of various investigators concerning plasma cells, giving a special importance to Maximow as the leading exponent of the leucocytic origin of these cells. On the other hand, Pappenheim and Borst are singled out as champions of the theory of fibroblastic origin of plasma cells, but considerable space is also devoted to Weber's views on the fibroblastic origin of the perivascular infiltration. The author states that in a former paper (*Bulletin de la societé de medicine mentale de Belgique*, 1904) he arrived at conclusions opposed to those of Weber, but that now after a further study of eighteen other cases he is forced to agree with Weber, save only in one particular, that is, he admits the motility of the changed fibroblasts. This view is discussed at some length. The author believes that the function of the plasma cell is secretory and that they take part in the formation of the antibody. The paper is interesting and is supplemented with a bibliography on this subject.

W. R. D.

Etude clinique sur la stéréotypie des déments précoces. Par DR. DROMARD. Archives de Neurologie, Vol. XIX, p. 189.

In this careful and interesting study the author divides stereotypies into two classes: akinetic or those of attitudes, and parakinetic or those of movement, under which he places stereotypies of speech, writing, mimicry, gait, and complex acts. These may be general or local, primary or secondary. The clinical value and diagnostic and prognostic significance are discussed and numerous examples are given. The author agrees with the majority of other writers on this subject that stereotypies have their genesis in delusions and in time become automatic. W. R. D.

Ricerche sul ricambio materiale nei dementi precoci. Seconda nota: Ricerche Urologiche. Del DOTTORI ANTONIO D'ORMEA e FERDINANDO MAGGIOTTO. Giornale di Psichiatria Clinica e Tecnica Manicomiale, Anno XXXII, Fasc. III-IV, 1904.

This is a continuation of a study which was begun in the preceding number and of which an abstract was given in the January number of this JOURNAL (p. 555). The present research has been as carefully carried out as was the former. The urine was examined for total quantity, specific gravity, urea, uric acid, chlorides, sulphates, and phosphates. The article begins with a review of the literature and then follows in detail the methods of research. A table of normal amounts of urine constituents was made from the figures as given by Bunge, Yvon, Landois, Albertoni, and Stefani, Batozzi, and Luciani. The averages given are as follows: Total quantity, 1400 cc.; sp. g., 1020; urea, 30 gm.; uric acid, 0.8 gm.; chlorides, 12 gm.; sulphates, 2 gm.; phosphates, 3 gm. The subjects supplying the research material were two men and two women in each of the three forms of dementia præcox and six examinations were made in each case. Slight differences were found in the different forms, the average total quantity for 24 hours being 969 cc. in the hebephrenics, 982 cc. in the catatonics, and 1292 cc. in the paranoiics. The average specific gravity was 1020.5 for the hebephrenics, 1019 for the catatonics, and 1015 for the paranoiics. The average number of grammes of phosphates eliminated was 1.388 in the hebephrenics, 1.380 in the catatonics, and 1.334 in the paranoiics. The average number of grammes of sulphates eliminated was 1.694 in the hebephrenics, 1.819 in the catatonics, and 1.678 in the paranoiics. The average number of grammes of chlorides eliminated was 13.241 in the hebephrenics, 15.282 in the catatonics, and 15.052 in the paranoiics. The average number of grammes of urea eliminated was 15.793 in the hebephrenics, 16.045 in the catatonics, and 17.360 in the paranoiics. The average number of grammes of uric acid eliminated was .258 in the hebephrenics, .286 in the catatonics, and .292 in the paranoiics. The averages for the series of cases is as follows: Total quantity, 1081 cc.; sp. g., 1018; urea, 16.4 gr.; uric acid, 0.2 gm.; chlorides, 14.5 gm.; sulphates, 1.7 gm.; phosphates, 1.3 gm. This research is especially valuable on account of the care with which it has been carried out and the careful detail in the report. W. R. D.

Varicocèle et Obsession. Par LUCIEN PICQUÉ. Le Progrès Médical, Tome XXI, p. 225, 15 Avril, 1905.

The author speaks of the cases of mental disorder which he has seen in whom the presence of a varicocele played an important part in the pathogenesis of the delusions or hypochondriacal ideas, and of the cases of varicocele in which hypochondriacal ideas or ideas of persecution were just beginning to show themselves. He takes a very conservative view of operative interference, believing that cases exhibiting marked hypochondriacal ideas or delusions of persecution should not be operated upon, as there frequently follows an exaggeration of the mental symptoms. The

cases in which he has found operation to be beneficial are those in which the varicocele is well marked and who show little or no mental symptoms. He believes that these cases can be saved from an hypochondriacal attack by an early operation. The paper concludes with abstracts of a number of illustrative cases. W. R. D.

The Mental Side of the Consumptive. By GUY H. FITZGERALD. Cleveland Medical Journal, Vol. IV, p. 221, May, 1905.

The author believes that mental strain may be as active an etiological factor as physical by producing a nervous exhaustion and lowering of the vital functions. He does not believe that there is any great variation in the mental or emotional characteristics in the pretubercular or initial stage of the affection, but states that the attitude of the general public toward the tuberculous patient has its harmful side, as most patients are sensitive and realize that they excite pity and a fear of contagion. The natural traits of character, such as selfishness and irritability, may become exaggerated late in the disease. It is a mistake to believe that the tuberculous patient is always optimistic, as in the early stages pessimism is usually the rule, being due to the shock, disappointment, and depression which must follow a diagnosis of tuberculosis. Late in the disease, however, there is an optimism largely due to psychic suggestion of the physician and also to auto-suggestion. The patient is always ready with a trivial cause to account for any symptom or development which may occur. Insanity of any type may develop among the tuberculous, depression being the common type in the early form, while excitement is usually limited to the later forms. Mental content is as necessary in successful treatment as pure air and good food. To succeed, the physician "must study the mental habits and peculiarities, and must recognize the worries and anxieties of his patients."

W. R. D.

Book Reviews

Clinical Lectures on Mental Diseases. By T. S. Clouston, M. D., Edin., F. R. C. P. E. Lea Brothers & Co., Philadelphia & New York, 1905.

That Dr. Clouston's "Text book on Mental Diseases" has reached its sixth edition, is evidence of its popularity, not only in the field of psychiatry, with its comparatively limited number of readers, but with the general practitioner as well, to whom the work appeals with particular force. The ability to present dry clinical facts and conclusions in the charming style adopted by Dr. Clouston, is a distinct advantage, and no matter how we may disagree with many of the views expressed by the accomplished alienist, we are forced to admit that few writers have been as successful, in popularizing the study of mental diseases.

While the average American psychiatrist is endeavoring to outdo Kraepelin at his own game, it would be too much to expect that Dr. Clouston's classification would be received here with any degree of favor, but it is apparent that he does not regard this question of paramount importance. No doubt he is quite right, and while this whole subject of classification is making such an admirable shuttlecock, for those contending for a newer and more scientific order of things, it may be a wise policy, for the present at least, to stand by terms which have done duty for half a century or more.

Dr. Clouston is evidently alive to the fact that a new day is dawning, and that there is a distinct effort to keep pace with the rapid evolution of psychiatry. Whether he has been altogether successful in this is largely a matter of opinion; at all events, the writer has shown, as was to be expected, a reasonable amount of Scotch caution, and in most instances is loyal to his first impressions.

That he is in full sympathy with the further development of accurate clinical methods and pathological studies is abundantly evident.

The average American psychiatrist will probably take exception to the statement on page 276, to the effect that it is difficult to define paranoia, as the term is used in Germany and America, but then Dr. Clouston is opposed to paranoia as used in any country, and when we think of the comfort this much abused word has given to many of our alienists, to say nothing of the editors of popular journals, we feel reluctant to part with an old and tried friend.

As in former editions two of the most striking lectures are on what are termed the Developmental Insanities and States of Defective Inhibition. On such themes Dr. Clouston is at his best, and with the admirable Sum-

mary of the General Treatment of Insanity as given in Lecture XX, most thoughtful practitioners will find themselves in full accord.

The lecture upon General Paralysis contains much that is of interest, although the vexed question of the origin of this hopeless malady is still left in the vague region of theory, with the rôle played by syphilis on the one hand, and bacterial infection on the other, made anything but clear.

Evidently Dr. Clouston believes that neither Kraft Ebing nor Dr. Ford Robertson has completely proved his theory, although he inclines towards the latter's belief in the bacterial origin of the disease.

The beautiful drawings and photographs contributed by Dr. Ford Robertson are an attractive addition to the lecture on General Paralysis.

On the whole, Dr. Clouston has amply justified his wish to put the present amended edition of his work before the medical public.

Les Nerfs du Coeur chez les Tabetiques, Etude clinique et anatomico-Pathologique. By DR. JEAN HEITZ. (Ancien Interne des Hôpitaux de Paris.) G. Steinhal, Paris, 1903.

The first part of this essay is devoted to a review of the anatomy and physiology of the cardiac nerves, preparatory to a discussion of the question whether the cardiac plexus contains vaso-motor and trophic fibres controlling the heart. The second part is a consideration of the changes in the cardiac plexus, together with the three classes of morbid conditions arising from them, namely, inflammation of the aorta, disturbances of rhythm, and in a small proportion of cases, different manifestations of pain. A number of clinical observations are given in detail and, appended, there are two plates and an exhaustive bibliography. The conclusions drawn by the writer are as follows: Aortic disease is rare in tabes, and when it occurs is almost always due to syphilis; it is characterized by latency. A certain proportion of tabetic patients suffer from excruciating pain localized over the apex of the heart, and occasionally, though rarely, there are cases manifesting genuine crises of angina with retro-sternal pain radiating down the left arm. Disturbances of cardiac rhythm in tabes are seldom accompanied by lesions of the cardiac plexus, but sclerosis of the right auricle has occasionally been observed. Neuritis of the pneumogastric is present in some cases of tabes, manifesting itself in laryngeal troubles and, in pronounced cases, by tachycardia, which disappears at the end of a few months. The greater number of patients with tabes have habitually a pulse of 90 to 100 at the outset of the disease, which disappears after a few months, and this rapidity of heart action is often accompanied by palpitations, the pulse in many cases showing a marked unsteadiness. The pathogenesis of these different symptoms is not yet known with certainty.

These investigations cover a field as yet little investigated, and the results, although not of general interest, are valuable to anyone pursuing the subject. C. M. L.

Psychiatry. A Text-Book for Students and Physicians. By STEWART PATON, M. D., Associate in Psychiatry, Johns Hopkins University; Director of the Laboratory, Sheppard and Enoch Pratt Hospital. Philadelphia & London, J. B. Lippincott Company, 1905.

It is generally recognized that psychiatry has entered upon a period of decided progress and wider interest, and the new era is, with much justification, identified with the great impetus which Kraepelin has given. There is no doubt there is a serious tendency toward progress developing in the work of many of our institutions. There is, however, even more evidence of a great tendency to restate old things in terms of a new nomenclature with the bait of prognostic differentiation, and not infrequently a use of the new terms where they utterly fail to conceal the ignorance of both old and new facts in psychiatry and give evidence of a feeling that anyone may say anything in a field in which nobody expects the average physician to have personal experience. If we see a work, otherwise inspiring confidence, making the statement that manic-depressive attacks are very frequent in epileptics, one finds in the context that the name has been taken up and the point missed completely. There is undoubtedly much more superficial conversion than deep change of mind and of method of work underlying a great share of this recent revival; and controversial points are discussed with a boldness which is apt to show as much in the false interpretation of the actual work of Kraepelin and others as in the wealth of imaginative deductions, from the mere sounds of new words in the way of hypotheses to explain the new creations.

Every new work arouses in one the query: Is it another addition to the long list of books which try to explain names and terms? Or it is a work describing and helping in the actual work with the patients?

Paton's book has been eagerly expected by those who knew of its growth. One of the foremost promoters of scientific work in hospitals for the insane, a pupil of Kraepelin and Nissl, and of other distinguished European alienists, a clear writer, and a man with experience in a large private hospital and teacher in a university dispensary for mental disorders, he could well be expected to furnish a stimulating picture of how psychiatry appears to him, and the book fully comes up to the mark of one's expectations. It wrestles with the most complex topic of medicine, in many parts with a refreshing departure from traditional ways of presentation and for the broader nosological conceptions it avoids the danger of adding new perplexities by accepting in a judicious way the general trend of the Kraepelin school. Throughout, the attitude of the physician is emphasized; everything is done to lead the student from what can be observed in the ordinary hospital ward and dispensary to what confronts the specialists, and by liberal references to the literature of the last few years, a closer touch is established with psychiatric work generally than has been done by any other work in the English language.

Paton begins with the importance, scope, and methods of modern psy-

chiatry. He deplores the short-sightedness of our public and of its representatives who let it come to pass that the Anglo-Saxon people have not a solitary institution connected with a university devoted to the investigation and teaching of psychiatry. "The mere presence of such an institution would indicate that people were as much interested in endeavoring to increase the public sanity as they are in the results of exploration in the uttermost parts of the earth or in the discovery of a new star." He insists on the great responsibility of the educator and draws a picture of the recent development of psychiatry, and the gradual passing away of the statistical period.

The second chapter deals with "the nature of the disease process in alienation and its relation to the pathological changes." In harmony with a current bad usage of the term, Paton means the anatomical changes found in autopsies and the histological data. As one might expect from his publications the reader meets with a well-founded sobriety concerning the neurone theory and perhaps an excessive optimism concerning the wholly hypothetical specific gray substance of the cortex. It is a matter of some regret that Cramer's summary of the pathological anatomy of mental diseases should have served as a foundation for a final summing up, and that the study of Alzheimer should not have instilled greater emphasis of the direct practical usefulness of obligatory cortex examinations. The general impression of the chapter might easily be pessimistic. It is doubtful whether a reader not personally familiar with the status of normal and abnormal neurohistology would carry away any great hope or a sufficiently definite plan of work from the grave-yard of the products of intemperate optimism and the meagre promises of direct usefulness of histopathology of the nervous system.

It is time to bury the illusions of a neurone-psychiatry, and of brain-cell mythology, and also the notion that the histological lesions are necessarily more easily identified and explained than most of the other manifestations of the disease. There is, however, to-day a decided practical field for the post-mortem study of the patient's cortex for the purpose of clearing up diagnostic doubts, and Alzheimer's work would make us feel that it is possible to diagnose histologically more than "80-90%" of the cases of general paralysis. We might justly ask who would to-day think of maintaining a clinical diagnosis of general paralysis in the face of negative findings? The diagnosis or exclusion of general paralysis, and of other degenerative processes offers many clean-cut problems for the study of post-mortem evidence.

Chapter III is devoted to the study of the symptoms of alienation. "All forms of alienation are to be regarded as the results of bodily disease in which the disordered functions of the cerebral cortex afford the most prominent and characteristic of the symptoms." He begins with impairment of the higher cortical functions as shown in defects of judgment and intellect and the fixed or insane ideas (p. 26-48), and deals successively with the anomalies in the intensity and direction of the mental processes as shown in disorders of the attention, disturbances of sensations

including hallucinations, disturbances of consciousness, disturbances in the functions of association; interference with the expression of connected thought, anomalies of memory; disturbances of orientation, disturbances in the volitional processes (p. 87-108), in the emotional reactions and anomalies of conduct with especial reference to the so-called moral insanity. These 100 pages differ in many ways from similar presentations in other works, and offer a vast number of facts. The difference lies especially in a tendency to make the reader develop an interest in the problems of the most recent literature. A militant attitude against ultrabiological psychology of the past is quite noticeable and occasionally an excessive faith in the illuminating power of organic sensations and other only apparently simple elements in the explanations of complex phenomena. The material is, however, on the whole well presented and confronts the reader with more live issues than any other similar presentation in English. For the beginner, it probably is not concrete enough, nor giving sufficiently conspicuous perspectives. The excellent chapter on the examination of patients, with a special appendix on the examination of the cerebrospinal fluid, is quite direct and introduces the student very efficiently to the symptomatology; more reference to the preceding chapter would probably have been of advantage in making the psychological interests and discussions of the third chapter more pointed, and digestible for the student. A chapter on treatment and especially the one on "the modern hospital for the insane" renders very well some of the ideals for which the alienist of to-day stand. If the medical profession could be led to see the truth of the statements, it might learn to become a strong power in helping the physicians of the State Institutions to stand up for the medical duties of the State beside the mere economic questions. Paton strongly advocates small hospitals as university clinics. He makes no misleading promises of improbable improvements to be attained by these small hospitals nor any invidious comparisons with the existing large hospitals, such as have made some other recommendations of "psychopathic hospitals" very objectionable. The chapter containing some of the best parts of the book is the one on the causes of insanity, largely owing to the valuable collation of the material of diseases of the internal organs, and the introduction of the best results of experimental and general biological and psychological work.

Chapter VIII on the principles concerned in a provisional clinical grouping of mental diseases introduces a grouping essentially following Kraepelin's, without really discussing the principles very much. Idiocy, imbecility, mental debility and moral insanity, and non-myxœdematous infantilism, are followed by a group of "psychoses which are probably in part the result of an auto-intoxication." It includes the prefebrile, the febrile, and postfebrile psychoses, the acute delirium (or what goes under the easily remembered, but not sufficiently non-committal, name collapse delirium) and the subacute states of delirium and mental confusion or amentia, a group which he justly finds larger and broader than Kraepelin. Korsakow's syndrome is classed with these states although it might more

appropriately come under the heading of truly toxic states. The chapter "on psychoses the result of chronic intoxications," deals very well with alcoholism, the acute intoxication, delirium tremens, acute alcoholic hallucinosis, paranoiac and dementing states and various complications and paraldehyde deliria, morphinism, cocainism, bromism, nicotism, ergotism and saturnism. The psychoses associated with imperfect functioning of the thyroid gland are myxœdema and cretinism and those accompanying exophthalmic goitre.

The chapter on manic-depressive insanity, notwithstanding many good points, is open to some criticism. The student, after a sketch of history (which is probably not as helpful as unencumbered going "medias in res") and an easily misinterpreted suggestion that what he will get is probably merely temporary, is started on a description of the motor, the sensory, emotional and physical symptoms of the manic form. The description of the motor symptoms contain references to tremor and ataxia as part of the picture; the implication in "the incoordination of all the muscles of the body," and the affection of the "muscles of speech and deglutition" draws the student's attention still further away from the fact that the key-note of manic-depressive states is their intra-psychic nature, as opposed to those with more largely sensory or motor disorders. The description is interwoven with many explanations of a very hypothetical character where the student had best master the recognition of the fact and its rôle in the stream of events without much pondering over explanations which can at best be conjectures and which are apt to rouse the interest in the direction of mere imagination rather than direct observation and utilization of what is at hand. The reference to symptoms indicating the existence of destructive lesions in the central nervous system, like the reference to the motor disorders really belonging to delirious and toxic states (effects of hyoscine, etc.) would be in their proper place as a warning against rash diagnoses of general paralysis, but as they stand, they get a distracting prominence. The student might also find it somewhat difficult to get a helpful picture of the decisive differential points from the case report pp. 365-367, and also from the remarks on differential diagnosis on p. 368, and the samples of flight of ideas on pp. 78-81. The statistical figures of Schott and the references to literature on "pathology" do not refer to distinctly manic-depressive cases.

The experience in the dispensary has given Paton a much better grasp on dementia præcox, yet the descriptions must leave the student in considerable difficulty when confronted with many a case. Will Paton be able to overcome the widely spread scepticism concerning this disease-form? There is (notwithstanding a warning against it) a tendency towards excessive splitting into groups without sufficient demonstration of what is actually achieved. No student will understand the refernce to Wernicke's heboid, nor will he be clear as to whether there is a difference between the paranoiac form and the dementia paranoides (for which an example is given which hardly deserves the epithet "paranoid;" so absolutely fleeting are the very scanty delusional complaints).

The "dementia paralytica group" receives 60 pages. It would lead too far to inquire into the reasons why this disease figures merely as a "group," and into the position of the diabetic pseudo-paresis (besides which syphilitic pseudo-paresis is mentioned whereas an alcoholic pseudo-paresis does not figure especially). The etiology is left very widely open. The description again begins with an analysis of symptoms which is followed by a very summary statement of the three stages and a somewhat fuller account of five forms, the acute, the depressed, the expansive, the simple dementing and the atypical cases (among which he mentions a cerebellar form, rather inappropriately considering the coincidence of the cerebellar hemiatrophy with hemiatrophy of the cerebrum). The pathological anatomy receives 11 pages and 9 plates, 2 of which represent the medullation of the normal cortex, without, however, any equivalent of the paretic cortex. The description is very summary, but draws attention to the chief gains of the last few years.

The chapters on epilepsy, hysteria, neurasthenia and psychasthenia are followed by a consideration of the psychoses associated with organic disease of the central nervous system (multiple sclerosis, amyotrophic lateral sclerosis, apoplexy, meningitis, brain abscess, brain tumors, arteriosclerosis, syphilis).

The paranoia group is given a peculiarly negative position as bringing "together certain chronic conditions which cannot be as yet definitely assigned to any of the symptom-complexes described." Considering the relatively large size of this group in reality, the meagreness of a positive description, beside the largely destructive analysis of some doctrinal aberrations is rather surprising. Only the litigious form is given a fairly full statement.

The last 24 pages are devoted to the senile group. After a brief statement of the usual mental and physical signs of senescence, Paton implants on Cramer's division of senile psychoses the descriptions of the involution melancholia of Kraepelin, presbyophrenia and the true senile dementia.

It would lead too far to enter upon the details of the chapters thus briefly named by title and epitomized most superficially.

A certain drawback to the present form of the book consists in the perhaps disproportionate desire to draw in the current literature without giving it enough space and, on account of the brevity, not infrequently without sufficient advantage to the reader nor wholly doing justice to the authors. In quite a few places, it deprives the presentation of unity and smoothness, as for instance on p. 87, where some theories concerning the catatonic symptom-complex interrupt the discussion of orientation quite unexpectedly. Moreover, there is a certain lack of concreteness, the very trait which is wanted above all to draw psychiatry out of the field of speculative literature into that of statements as to what occurs and what is to be done to meet it. The actual records chosen for illustration are not enough used, nor chosen so as to convince the student that the concrete fact is more than an approximate illustration of the generalizing statement. Yet what do we train students for, if not for the dealing with con-

crete events? These are matters which might easily be remedied in the second edition.

As it is now, the book will bring much stimulation to those who have already a fund of experience, and the student will have his interest directed to the work of many workers and have his desire awakened for first-hand acquaintance with the literature. A. M.

Sixth Annual Report of the State Board of Insanity of the Commonwealth of Massachusetts for the Year ending September 30, 1904. Boston, 1905, Wright & Potter Printing Co.

The general report occupies one hundred and eleven pages and the statistical tables and the directory of institutions occupy sixty-four more. The bulk of the general report concerning necessary appropriations, construction, etc., is not of special interest to those not immediately concerned in the care of the insane of Massachusetts, but certain recommendations which are made for new legislation relative to the insane is suggestive for reforms which may be inaugurated elsewhere. Among these is the recommendation that the period for which patients are paroled be extended from sixty days to six months, experience having shown that sixty days is frequently too short a time in which to be positive of the patient's ability to remain outside of hospital care. Another is the recommendation that the laws regulating voluntary commitment be so amended as to include free cases and to avoid the strict construction placed upon the present law which keeps many persons from having the benefit of voluntary commitment. Legislation is also recommended permitting the trustees of the various hospitals to arrange for family care of patients. An inquiry has been made relative to the early care of the insane and opinions have been secured from about one-third of the physicians of the state relating to this question, which it is proposed to solve by the establishment of psychiatric wards in general hospitals, such as has been established in Albany. This report is one of the most valuable that we receive. W. R. D.

Report of the Commissioner of Education for the Year 1903. Vols. I and II, Washington, 1905. Government Printing Office.

In volumes such as these, the first containing a hundred and seven pages in the introduction and twelve hundred and sixteen in the body of the work, the reviewer meets with an embarrassment of riches upon which to comment, and it is therefore impossible to do much more than briefly mention a few of the special subjejcts which seem to be of exceptional interest. To the antiquarian or the bibliophile, the sixth chapter will especially appeal, as it is entitled Notices of Some Early English Writers on Education, 1553-1574, and from it we may learn the status of education in England in the century preceding the colonization of America, as well as become acquainted with much that is quaint and curious in English literature. Chapter fourteen is devoted to consular reports on education and a number of them are of exceptional interest. The one on Education

and the Elimination of Crime is an abstract from a German weekly, and in it is shown that in Great Britain between 1841 and 1887 the number of children at school to every 1000 of population increased from 11 to 125, while in the same period the number of criminals to each 100,000 of population decreased from 122 to 38, the number of youthful criminals decreasing from 45.8 to 21.5. The writer draws attention, however, to the fact that education is only one factor and want and temptation have become much less than formerly. Chapter seventeen covers thirty-six pages and is On Physical Training by Edward Mussey Hartwell. It contains much of interest, and the author's remarks on the spirit of athletics as shown in America (p. 153) commend themselves to the thoughtful. The above are but few of the many interesting features of this volume. In the second volume we also find much of interest, chapter twenty-nine devotes forty pages to sketches of Educational Benefactors and Lives Devoted to Education, by Hon. John Eaton, LL. D. These are brief but very interesting, and are supplemented by chapter thirty-one which is devoted to Biographical Notices. Of especial interest to medical men are chapter thirty-five on Professional Instruction, chapter forty on Schools for Nurses, and chapter forty-three on Schools for the Defective Classes (the blind, deaf, and feeble-minded), but the above by no means indicates all that appeals to those who take even a slight interest in education, and much has only an indirect relation to educational matters, for example, the chapter on the Introduction of Domestic Reindeer into Alaska.

W. R. D.

Forty-seventh Annual Report of the General Board of Commissioners in Lunacy for Scotland. Glasgow, 1905.

On the first of January, 1905, there were 17,241 insane persons officially known to the Commissioners in Lunacy for Scotland, an increase of 347 during the previous year. Considerable space in the body of the report is occupied by the statistics relating to the patients admitted and discharged during the year, and Appendix A is given over to statistical tables of those admitted and discharged from 1858 to the present time. In these tables an average is made every five years which is convenient for those consulting them. The establishments for the insane are arranged in the following groups: (a) Royal and District Asylums; (b) Private Asylums; (c) Parochial Asylums; (d) Lunatic Wards of Poor-houses; (e) Training Schools for Imbecile Children, and (f) the Department for Criminal or State Patients in the General Prison. As a rule the statistics of the last two groups are given separately from the others. A very interesting feature is the table giving the progressive history of 2539 patients first admitted into establishments in 1898. There were 557 readmissions of the original number making a total of admissions of 3096, and of this number 1336 were discharged recovered, 396 discharged unrecovered, 705 died, and 659 were remaining at the end of 1904. In commenting upon Changes among Attendants and Servants in Establishments, the following

seems worthy of quotation as indicating the opinion of others: "We recommend that the administrators of institutions in which changes occur frequently should enquire carefully into the causes, and should endeavour to remove them by offering increased inducements to good attendants to remain, and to a better class to take service. Our experience tends to show that in the case of men, a high class of attendant and security for permanent service are best obtained by increasing the number of married attendants. We therefore recommend in all cases in which it has not already been done, that comfortable cottages for married attendants should be provided, wherever such accommodation is not to be had in the immediate neighborhood of the asylum."

Appendix C gives the reports of those appointed to visit the insane in private dwellings. Especially interesting to the student of heredity is the report of Dr. Macpherson on Insanity in Long Island on page 174. The whole report is of great interest to those who care for the insane.

W. R. D.

Transactions of the College of Physicians of Philadelphia. Third Series, Vol. XXVI. Philadelphia, 1904.

The latest of the volumes of transactions of the College of Physicians of Philadelphia is fully up to the standard set by former volumes. The papers contained in this volume are devoted largely to general medical and surgical subjects, differing in this respect from the preceding volume, in which the papers were largely of neurological interest. There are two papers in Vol. XXVI relating to neurology. One is by Dr. W. S. Spiller, entitled "Points of Resemblance between Paralysis Agitans and Arthritis Deformans," which is fully up to this well-known writer's previous work. The other paper is by Dr. Charles K. Mills, on "Aphasia and the Cerebral Zone of Speech," a subject in which this writer has been interested for some time and upon which he has written much of value.

These papers have not been singled out because of their greater relative value as compared with others in the volume, but because of their greater interest to readers of this JOURNAL. The whole volume, as is commonly true of the Transactions of the College of Physicians, will well repay reading and, in the case of many of the papers, careful study. W. R. D.

Recherches cliniques et therapeutiques sur l'èpilepsie, l'hysterie et l'idiotie, Compte-rendu du service des enfants idiots, èpileptiques, arrières et alienes de Bicêtre, pendant l'armee 1903. Par BOURNEVILLE avec la collaboration de MM. BOYER, L. IZON, LEMAIRE, REINE MAUGERET (MLLE.), JULIEN NOIR, PAUL-BONCOUR. (Paris: Felix Alcan, 1904.)

These reports of the institution for feeble-minded at Bicetre are always of great interest to those whose duty it is to care for the insane or feeble-minded. As usual, this report is divided into two parts, the first being an account of the admissions, changes, improvements, and other matters which pertain especially to the service during 1903; and the second being a collec-

tion of sixteen articles by Dr. Bourneville and his colleagues, a number of which have appeared in some of the French medical journals. Dr. Bourneville, however, is responsible for the major part of the second part, as he is the author of thirteen of the fifteen signed articles, the sixteenth not being signed. Six of these articles are of a statistical character dealing with the Persistence or Absence of the Thymus; Synostosis of the Skull; The Persistence of the Metopic Suture; Consanguinity as an Etiological Factor; Hemiplegics treated during 1903; and a summary of the myxœdematous cases treated. A most important article, entitled "De quelques formes de nanisme et de leur traitement par la gland thyroïde," is by Bourneville, Lemaire, and Reine Maugeret, and covers 186 pages. The other papers are equally interesting. As usual, the typographical part of the work has been done by the "Enfants de Bicêtre," and they have done their work well.

W. R. D.

Obituary

SIR JOHN SIBBALD, M. D., F. R. C. P., EDIN.

It is with much regret that we chronicle the death of Dr. Sibbald, which occurred on the 20th of April last, at the age of 72. Dr. Sibbald was born in Edinburgh and educated at the University of that city. After serving for some years as an assistant physician at the Abergavenny Asylum in 1862 he was appointed Medical Superintendent of the Argyllshire Asylum which he organized and opened. In 1870 he was appointed Deputy Commission in Lunacy of Scotland and in 1878, at the death of Sir James Coxe was appointed Commissioner of Lunacy, a position which he filled with much credit until he retired by reason of age in 1899, and at which time he received the honor of Knighthood. Dr. Sibbald was early attracted by the teachings of the German Psychiatrists and especially by the work of Griesinger whose teaching he followed for some time after Prof. Griesinger assumed the directorship of the clinic at Berlin. Recently he has been one of the most earnest advocates of the introduction of clinics modeled after the German clinics in Scotch University towns; and in 1902, at the meeting of the British Medico-Psychological Association the writer had the pleasure of listening to his views and learning of his opinion of the methods pursued in Germany. Dr. Sibbald died of malignant affection of the throat, symptoms of which first appear in 1904. The early diagnosis of the serious character of this affection was met with great calmness by the doctor who did not permit his knowledge of the inevitable termination of his disease to diminish his interest in his professional work; and to the end he retained his interest and activity in the specialty to which he had devoted the active years of his life, and up to within a few weeks of his death was engaged in consultation work.

A portrait of himself was presented to Dr. Sibbald on his retiring from the commissionership in 1899 which is reproduced in the July number of the *Journal of Mental Science.*

HENRY P. STEARNS.

Henry Putnam Stearns, A. M., M. D., was born at Sutton, Mass., April 18, 1828.

His parents were Asa and Polly (Putnam) Stearns, the former being sixth in direct descent from Charles Sterne, who was made a freeman in Watertown, Mass., in 1647, and who was a nephew of Izaac Sterne, who came to America with Gov. John Winthrop in 1630.

Polly (Putnam) Stearns was a descendant of Nathaniel Putnam, who emigrated to this country about 1634 and settled at Salem, Mass., and also of Lieut. Thomas Putnam, the grandfather of Gen. Israel Putnam of Revolutionary fame.

Thus, Dr. Stearns came, upon both sides, from the best New England stock, and his exceptional strength of character and high standard of life and conduct came to him naturally by descent from ancestors with whom conscience dominated all other considerations.

He passed through the common schools and the Monson Academy at Monson, Mass., to Yale College in 1849, where he was graduated in the class of 1853. A number of his classmates bore names which have since become well known, among them being Andrew D. White, Wayne MacVeagh, Edmund Clarence Stedman, and Charlton Lewis.

Dr. Stearns affection for his Alma Mater remained fresh and strong to the end of his life, commencement day often seeing him among the alumni present, and his pride in and affection for Yale being themes upon which he loved to dwell.

He had intended to prepare for the ministry upon graduation but, feeling a strong bias toward medical study, was much exercised as to which path in life it was his duty to adopt. He finally submitted the question to a clergyman whom he held in high esteem as a scholar and Christian and was advised that the counsels of nature were the voice of the Almighty, in many cases, and that their meaning for him might well be that he could better serve as a physician to mind and body than in the pulpit.

With his mind relieved and his scruples removed by this most excellent advice, Dr. Stearns studied medicine for one year at Harvard and for one year at Yale, taking the degree of M. D. at

the latter college in 1855. A chance remark by a classmate in praise of Edinburgh University led him eventually to continue his studies there for a year, attending, among other lectures, those delivered by Sir James Young Simpson, afterward surgeon to Queen Victoria, and numbering among his friends the late Sir John Sibbald, Commissioner in Lunacy for Scotland, with whom he corresponded at intervals throughout their lives.

During his residence abroad Dr. Stearns also attended lectures in Paris and was for a time house surgeon at the Royal Infirmary, Edinburgh.

In 1857 he returned to America, filling the position of surgeon upon the ship in which he came with his wife, formerly Miss Annie Elizabeth Storrier, of Dumfries, Scotland, whom he had married August 29 of that year and with whom he enjoyed for nearly half a century a life of ideal happiness based upon the deepest mutual affection, sympathy, and respect, until Mrs. Stearns' death, April 16, 1903. Dr. Stearns practiced his profession at Marlboro, Mass., until 1859, but, looking for a larger field, he then moved to Hartford, Conn., soon making a large circle of friends and acquiring a considerable practice there and beginning that career of nearly forty-five years of usefulness and distinction by which the city of his adoption profited so greatly. He had been endowed by nature, however, with the true soldier's temperament—eager to serve, willing to obey, and able to command, with his comrades and country a part of his most intimate self.

When therefore others around him responded to the call to arms in 1861 he simply could not remain at home but, impelled by the purest courage and patriotism and at great personal sacrifice, offered himself to his country with an eagerness and hearty good will which all who knew him well later in life can fully understand.

Mustered in for three months' service as surgeon of the 1st Conn. Regiment, his commission, dated April 18, 1861, was probably the earliest one of its class issued.

He went to the front at once with his regiment and was present and did good service at the first battle of Bull Run.

His term of service then having expired, he applied for reappointment but, in those days of confusion and favoritism, was

passed by again and again while waiting patiently in official anterooms to be allowed to give his great abilities, and life if necessary, to his country's service.

Finally he attracted the notice of an influential member of Congress, who in a few moments obtained a new commission for him, which was followed by orders to report as brigade surgeon to General Fremont then having his headquarters in St. Louis.

He was soon assigned to the staff of General Grant, and was with him throughout his whole career in the Southwest, though for a short time immediately subsequent to February, 1862, under the orders of General McClernand as medical director of the right wing of the army.

In September, 1862, he was detailed as medical inspector of hospitals on the staff of Col. R. C. Wood, Assistant Surgeon General U. S. Army, and in December, 1862, was appointed medical director of the U. S. general hospitals of the Northern Division of the Army of the Mississippi at General Grant's request. In the fall of 1863, reporting again to General Wood, he was detailed to superintend the building of the Joe Holt Hospital at Jeffersonville, Ind., and then as medical director of the U. S. general hospitals at Nashville, Tenn., where he was in charge of patients averaging 10,000 in number at all times.

He remained at Nashville until September, 1865, when he was mustered out at his own request and returned to Hartford.

During his varied experience in the army he served professionally at several of the more memorable battles besides his initial experience at Bull Run. Among these battles were those at Belmont, Ft. Henry, Ft. Donelson, and Shiloh or Pittsburgh Landing, and his descriptions of them were most interesting.

He witnessed General Grant's perilous re-embarkation at Belmont and confirms the correctness of the latter's account of it in his "Life" except in that the general was the last man but one to embark, he himself having been the last. Immediately after this battle he was asked by Confederate officers whom he met under a flag of truce, what the U. S. Government meant by its hopeless resistance to the demands of the South and how he (Dr. Stearns) thought it could all end otherwise than in victory for the latter. Although alone among many Confederates, he replied: "I think that we are as good men as you are and I know

that there are twice as many of us, and I feel sure that the end will be your defeat after a gallant but useless struggle," and time showed that he was right, although but few felt so certain of it then. He was at one time ordered to fortify his hospital and, if necessary, to defend it, and complied with the former order with a determination to fight as well as to heal which any one who knew him can understand easily. His hospital, undefended, was captured at another time by guerillas under General Forrest, with whom he had an altercation on account of his refusal to join the general in a friendly drink, but he always spoke of the guerilla chief with respect as an honorable and humane officer.

At General Grant's personal request, Dr. Stearns for some time took charge of a large steamer used to provide first aid to the wounded and to transport them to permanent hospitals and, in describing his interview with the general, quoted the latter as saying: "You can deal with me direct, calling on me for everything needed by your patients, and you have my promise that nothing shall delay attention to or cut down your requisitions." He preserved through life the highest regard for the general and lamented that it had not seemed best to call upon him in his last days at Mt. McGregor. This great pleasure Dr. Stearns denied himself because he feared to seem to intrude upon such suffering, and it was consistent with all the other characteristics of his fine nature to always dread lest an advance on his part might seem an intrusion, though no one could be less liable to such criticism.

He loved to dwell upon his army experiences and the soldier spirit was evident in all his narratives concerning them. He looked upon it as the most valuable training in his life, inculcating as it had systematic methods of working and recording results, subordination to authority, respect for the rights of subordinates, and readiness to take responsibility.

A point often mentioned by him as the chief result of this experience was the absolute necessity for sanitation of the most thorough kind in connection with surgical and medical work, a principle of late years well established but in those days not so well understood, and he congratulated himself with good reason upon the fact that, after a few months of observation, he had insisted upon it in the many hospitals under his charge, even though other desirable features had to be sacrificed.

From 1865 to 1874 Dr. Stearns practiced in Hartford most successfully, having probably the largest practice in the city when he accepted the call to the superintendency of the Hartford Retreat and entered upon his duties January 20 of the latter year.

During this interval of nine years he acted as medical adviser to the Travellers' Insurance Company and originated many features in this branch of medical practice which have since then been generally followed.

He also served as physician to the Hartford Hospital. His acceptance of the call to the Retreat was due in great measure to the advise of his friends in the interest of his health.

Before assuming his new duties, and again at a later date, he visited Europe again to examine institutions for the treatment of mental disease and, with their assumption, began his career in the specialty in which he afterward became so eminent.

While superintendent of the Retreat and devoting to it his energies and abilities and steadfastly refusing calls offering great attractions financially and otherwise, he found time to lecture at Yale upon insanity from 1875 to 1897, to serve as an expert upon many trials in which questions of insanity were involved—notably the Guiteau case and the Stokes will case—and to write many brochures upon subjects connected with his specialty.

Among these were: "Medical Examination for Life Insurance"; "Insanity, Its Causes and Prevention"; "Lectures on Mental Diseases"; parts of the "Medical and Surgical History of the War of the Rebellion"; "Expert Testimony in the Case of the United States against Guiteau"; "Relations of Insanity to Modern Civilization"; "The Insane Diathesis"; "The Care of Some Classes of the Insane"; "Some Notes on the Present State of Psychiatry," and "State Provision for the Insane."

While superintendent of the Retreat he, from the first, urged and promoted the abandonment of unnecessary restraint for patients, and the uniform observance of kindness and courtesy toward them, and also advocated and secured the establishment of cottages for the treatment of certain forms of mental disease.

Five of these cottages were added to the Retreat during his administration, and the results have been most satisfactory to him and to all interested in its prosperity and efficiency.

He was a member of the American Medical Association; the

American Medico-Psychological Association, of which he was president in 1891, and the New England Psychological Association. He has been president and vice-president of the Connecticut Medical Society and was an honorary member of the British Medico-Psychological Association, the Boston Medico-Psychological Association, and the Vermont Medical Society.

He was also a member of the Army and Navy Club of Connecticut; the Military Order of the Loyal Legion of the United States; Robert O. Tyler Post, No. 50, G. A. R., of Hartford; the Society of Colonial Wars; the Connecticut Historical Society; the National Geographical Society, and the Sons of the American Revolution.

He was also a director of the Connecticut Bible Society, the Connecticut Humane Society, the Hartford Retreat, and the Connecticut Institute for the Blind, and was once president of the Yale Medical Alumni Association.

His many-sided nature and varied abilities were also evidenced in his connection with many of the business enterprises which have made Hartford famous, having been a trustee of the Billings and Spencer Company, the Connecticut Fire Insurance Company, the Hartford Trust Company, and the Travellers' Insurance Company. He was a prominent member of the Center Congregational Church of Hartford during his entire life there, having been a deacon in that church during the last thirty-five years of his life.

Dr. Stearns remained in active charge of the Hartford Retreat and had relinquished but few of his duties until the fall of 1904, when, his health beginning to fail from old age and as a natural result of his active life and self-forgetful devotion to his duties, he found it necessary to gradually retire from his position and to tender his final resignation March 31, 1905. This had been offered previously and declined and now its acceptance marked the close of thirty-one years of faithful service and fifty years in his profession. He then, after a comparatively brief and painless illness, passed quietly away May 27, 1905, with his family at his side, leaving his work for others to take up. A most enviable reputation as a physician and in private and business life, and many sorrowing friends, survive him, but he felt prepared to go and willingly relinquished his hold on life with the firmest trust in all that constitutes a devout Christian's belief.

This sketch of his career describes, though inadequately and mainly by inference, his exceptional character and attainments and further elaboration by the use of words whose meaning has been dulled by frequent use seems superfluous, although the temptation to add them is great.

Dr. Stearns is survived by a brother, Charles S. Stearns of Boston, and by two sons, Charles Storrier Stearns of Newburgh, N. Y., and Henry Stuart Stearns, a graduate of Williams College and an attorney-at-law of Hartford, who married Mary Olmsted, daughter of Dr. H. K. Olmsted of Hartford; also by two grandsons, Stuart Olmsted and Henry Putnam Stearns, the sons of Henry Stuart Stearns and wife.

An only daughter of Dr. and Mrs. Stearns died in childhood.

W. N. T.

WILLIAM M. EDWARDS.

Dr. Wm. M. Edwards, late medical superintendent of the Michigan Asylum for the Insane, Kalamazoo, died at the University Hospital in Ann Arbor on the 26th of April, 1905. He was born September 17, 1855, at Peru, Indiana; was educated at the district schools in his native town, in Smithson College, Logansport, and the University of Indiana. He graduated from the Department of Medicine and Surgery of the University of Michigan in 1884, was appointed assistant physician to the Michigan Asylum the same year, and elected medical superintendent of that institution June 1, 1891. He was married August 10, 1897, to Emma Ardele Merritt of Union City, and had one child who died in infancy.

To those who knew Dr. Edwards intimately, his resourcefulness and ability to accomplish work were remarkable. Handicapped by a disease of the heart of many years' standing and of a gravity to incapacitate a less courageous man, he steadily ignored its existence and conducted the affairs of the important institution over which he presided with brilliant success. He had executive ability of a high order and a dependable and retentive memory. He never spared himself, and if criticism were to be passed upon his work it is that he erred on the side of too great personal attention to detail. During his administration the complexion of

the establishment was transformed. The somewhat antiquated buildings were changed to an extent which amounted practically to reconstruction. The colony system was extended and developed; detached hospitals and infirmaries for patients of both sexes were erected; a beautiful building combining the purposes of chapel and amusement hall; a monster power and electric light plant, and a water tower were built. Fire walls were placed in the attics and between sections of the old buildings. Outside fire escapes, ample store rooms, shop buildings, and a cottage for men employed on the farm were built, and other improvements one after another effected. A highly successful training school for nurses was organized and to this important work he gave his best thought.

He had an eye single to the welfare of patients, his sympathies were large and went out in overflowing measure to patients and their relatives. Patients were his friends and he their help and dependence. He gave hours to conversation with them and with their relatives where many spare minutes only. He had keen appreciation of their habits of thought and was singularly responsive to the humorous side, a characteristic not lacking in the most successful men in a work naturally depressing and calling for large emotional expenditure.

His manner was in the highest degree gentle, considerate, and refined. He possessed a suavity and grace that appealed to everyone. He was an ideal host. During the last year he looked forward to a fatal termination of his disease. He had been told by a distinguished London physician that he had at the outside not more than three years to live, but he never faltered in his work and was on his way to San Antonio to the meeting of the Association, a journey which he expected to take by easy stages, when he became alarmingly ill. He hurried to Michigan and placed himself, as he had once before, in the University Hospital at Ann Arbor, but unfortunately the best directed efforts of the attentive and sympathetic staff could not arrest the progress of the disease, and death soon came preceded by a blissful period of unconsciousness of two or three days' duration.

It is not extravagant to say that he was one of the most active members of the American Medico-Psychological Association. No member was more constant in attendance, more ready to help out

in the program with papers, or more willing to take part in every professional and social event in connection with the meetings. It was a matter of conscience with him to attend every session and he could be depended upon to be in his seat at the stroke of the gavel. He never permitted an outside distraction to seduce him from this allegiance and might be invariably relied upon to take part in discussions, particularly those which bade fair to be apathetic. Moreover, he always had something interesting to say. From a vantage point on the platform for several years, I often took notice of his face. He was attentive, responsive, and constantly alert. He thought quickly, saw points readily, made opportune motions, and was a great comfort to the presiding officer because of his prompt recognition of the parliamentary conventions.

Dr. Edwards was a member of the Council of the American Medico-Psychological Association for several years, and on one or more occasions represented the Association at the meeting of the British Medico-Psychological Association. He was a member of the American Medical Association, the State Medical Society, and the Kalamazoo Academy of Medicine, of which he has been president. For some years he was on the editorial staff of the *Physician and Surgeon* at Ann Arbor, and special lecturer on Insanity in the Department of Medicine and Surgery in the University of Michigan. He was a member of the Mu Sigma Nu fraternity, of Anchor Lodge No. 87, Kalamazoo Chapter No. 13, Peninsular Commandery No. 8. He has prepared many papers for the Kalamazoo Academy of Medicine, the American Medico-Psychological Association, and the State Medical Society; is the author of the reports of the Michigan Asylum at Kalamazoo since 1891; and of numerous papers to the Joint Board of Trustees, the Conference of Charities, and other organizations interested in the care of the insane. Last year he read a paper before the Board of Control of the Iowa State Institutions.

Dr. Edwards had the happy faculty of saying comforting and appreciative things. Without sacrificing his convictions or principles, he had a graceful habit of amiable expression, and in his estimate of men and their work never erred on the side of being uncharitable. He looked for the best, and looking for the best,

discovered it. The institutional policies he adopted were broad and liberal. The development of American psychiatry owes much to his efforts. We were practically contemporaries in hospital superintendency and our work brought us into close association for many years. He was judicious as an adviser, lovable as a companion, and in his relations with the public and his profession, *san peur et sans reproche.* C. B. B.

CARL WERNICKE.

On the fifteenth of June, 1905, died, at the age of fifty-seven, Professor CARL WERNICKE, as the result of an accident during a Whitsuntide excursion a-wheel through the valley of the Gera.

With the untimely death of Wernicke, modern psychiatry has lost one of her few great masters, one whose viewpoint of mental disease was unique and singularly instructive, and whose conservative and consequent thinking has contributed in large degree to the rounding out of the essential facts in psychiatry, so richly developed by the workers of the present generation.

Wernicke first attained prominence through his remarkable study, "Der aphasische Symptomcomplex" (1874), which has served as the groundwork for all subsequent investigations into the processes of speech.

In 1885 he was made associate professor at the University of Breslau, where his study days had been spent, and here in 1890 he received the title of Ordinarius. From here also appeared the well-known text-book, "Grundriss der Psychiatrie" (1900).

After fourteen years in Breslau, Wernicke was called to assume the directorship of the psychiatric clinic at Halle, where he was just completing his first year of service when so suddenly removed.

Wherever the science of the diseased mind is cultivated, there the name of Wernicke is honored and revered.

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THE PROBLEM OF PSYCHIATRY IN THE FUNCTIONAL PSYCHOSES.[1]

BY EDWARD COWLES, M. D.,
Boston, Mass.

In the study of Mental Diseases it is important to find their true place in relation to other pathological conditions. Our conceptions of the nature of mental symptoms should be framed in harmony with the true principles of general pathology. These are essential requisites for the progress of psychiatry. I shall try to present some considerations to this end in discussing my subject: The problem of psychiatry in the functional psychoses.

It is essential here, as in all such inquiries, to have a clear understanding of the terms of the problem; words and phrases, and the formulæ of principles, should have correct and definite meanings. Our ideas may be embodied at first in words which seem to express exactly all that we know; but as our conceptions tend to outgrow their verbal expressions these may gain the larger import and lose the narrowness of their derivations; or being used in an earlier and more or less restricted sense they hamper thinking in the shackles of authoritative phrases that obstruct reasoning, and single words may perpetuate error and lead to confusion of interpretation and discussion. The dicta of general principles accepted as fundamental may sometimes harbor hidden fallacies and prove to be untrue after having long retarded progress. It is

[1] To fill the vacancy in the programme created by the absence of one of the principal speakers, this address was presented, by Dr. Edward Cowles, Chairman of the Section of Psychiatry of the International Congress of Arts and Sciences, St. Louis, September, 1904, and subsequently revised by him from the outline then given.—Editors AMERICAN JOURNAL OF INSANITY.

a necessary part of this discussion to examine first some definitions and the formulæ of certain accepted principles and the doctrines drawn from them.

The terms in which the present subject is expressed contain no ambiguity as to its meaning to lay down the proposition that the problem of psychiatry is to be found in the functional psychoses, meaning here mental diseases. But something needs to be said defining the true province of psychiatry; and the words "functional psychoses" lead at once into the maze of difficulty surrounding the relations of functional and organic diseases. In the definition of disease, as "any morbid deviation from normal health," "the important distinction is drawn between organic or structural diseases in which there is a lesion or pathological condition of some part of the body, and functional diseases in which there is an irregular action of a part but without organic abnormality." But keeping to this distinction it is a remarkable fact that the word "psychosis" is used in opposing senses in mental physiology and mental pathology. The psychologists, having regard to the normal processes use "psychosis" as "equivalent to the mental or psychical element in a psycho-physical process, just as neurosis refers to that aspect of the process which belongs to the nervous system." On the other hand, in psychiatry the word "psychosis" is used pathologically and "designates an abnormal mental condition"; it is described as a typical form of insanity ("disease-form") which can be scientifically differentiated and correlated with a specific "disease-process," and the usage implies a structural change. In neurology "neurosis" is also changed from its normal functional sense in psychology and used to designate a "morbid or diseased condition." "Functional neurosis is a morbid affection of the nervous system known only by its symptoms, and without anatomical basis. It is doubtless true that an anatomical lesion of some kind does in each case exist, and the classification of diseases as organic and functional is but a concession to our ignorance."[1] These instances afford examples of looseness of usage in two most closely interdependent lines of research showing the disharmony between them that tends to confusion of understanding. It is allowable to speak of the neuroses,

[1] Baldwin, Dict. of Philos. and Psychol.

and the meaning is plain as referring quite exclusively to functional disorders; but to constitute a true psychosis, in the pathological sense, it must have a definitely differentiated symptom-complex that can be designated as a "disease-form"; this is commonly spoken of as a clinical "entity," and it implies a correlated "disease-process." We may speak of acute and chronic psychoses, or of organic psychoses, to distinguish the insanity due to cerebral disease. But the psychoses proper being conceived as real disease-entities, when in psychiatry we wish to speak of the group of minor and often temporary variations of the mental functions, parallel or corresponding to the neuroses in neurology, the word functional must be added and the term functional psychoses used as in the subject of this discussion.

The Position of Psychiatry as Shown by Current Teachings.

The point of view of this inquiry is that of general medicine for one who, without predilection and looking for light on all sides, approaches the field of psychiatry and tries to understand its problems. In seeking the true place of mental diseases in relation to other pathological conditions, and in order to harmonize his conceptions with the true principles of general pathology, it is found at the outset that the functional psychoses are to be regarded as being in contrast with the psychoses proper associated with assumed structural changes and "disease-processes," or with definite organic diseases of the brain. Here as in general medicine this distinction of functional and organic disease appears to be an expression of the dominance of morphological conceptions in medical knowledge. Diseases due to obvious structural changes can be understood and subjected to treatment as in surgery; but the bodily diseases called functional for which there is no pathological anatomy constitute a very large group.

Although there is a greater reason for this being true also of functional mental diseases, the inquirer finds in the psychiatry of the time small interest in them. It is a very old idea that the different forms of insanity may be explained by the study of the brain and its degenerations. The history of modern psychiatry shows that it has given great emphasis to these morphological

conceptions by its precise methods and achievements in histological investigations of the brain. In recent years the German schools have been the centres of interest. The environment of their origin had pre-eminently the morphological stamp. Thus the effort to determine definite "disease-forms" and "disease-processes" has been a distinctive characteristic of modern teachings in the search for anatomical correlations and explanations. The application of the scientific method in clinical study has been most fruitful of admirable results. The "disease-process" assumption has been stimulating and helpful as a spur to morphological investigation, which all agree should be carried to the utmost. But with the inheritance of such conceptions the modern movement has been characterized also by the continuance of the quest for mature forms and types and for their systematic classification. The pathological principles being embodied in the designations "disease-form" and "entity," and "disease-process," the consistent use of these has implied that every such pathological process should have its cause, course, and outcome. A psychosis thus constituted is held to present the attributes of scientific truth although some actual morphological characters that furnish complete and proper proof may yet be wanting.

While these teachings have been taking form in the last twenty years, the influence of modern psychology has been felt and is becoming apparent, especially in the last half decade. Although psychological studies of mental functions are viewed with much of the same distrust as before, the experimental method, in its clinical use in psychiatry, excites interest by the objective character of its results; they have the value of observed and measurable facts of function which may contain the promise of being ultimately traceable to facts of structure.

The present results of this movement are exceedingly interesting and promising, although it is true that there is much diversity in the products of these methods of study. With the increasing number of observers the more variations there appear to be in the interpretation of the phenomena. This is shown in the differentiation of named "disease-forms," and by a comparative study of some new classifications.[8] This, however, is a hopeful stage of

[8] Meyer, A., A few Trends in Modern Psychiatry, The Psychological Bulletin, Vol. I, 1904.

progress. In the extreme view it has been held to be unreasonable that any conclusions can be drawn from the psychical activity of a diseased brain; psychological explanation is of no value, it is said, without an objective measure in definite "disease-processes" in the cortex. According to other views, in which the conception of a "disease-process" is still fundamental, conditions that do not lead to deterioration are conceived to be of a "special type," and a "biological entity" is conjectured as representing "a special kind of disease-process or disease-principle." Again under broader conceptions it is held that more than one point of view is needed to do justice to psychiatry, and a special psychopathology is founded upon normal psychology. But this meets with criticism as giving undue prominence to psychological distinctions inconsistent with a true medical conception of disease.

The influence of the new German schools has been strongly felt in other countries. But the inquirer, extending his survey in these directions, finds that the cotemporary interest in the physiological aspects of psychiatrical problems has not waned, though they are somewhat overshadowed. In Italy, for example, Ferrari has studied the pathology of the emotions, as has Féré in France, where Ribot has done the most to elucidate the relation of mental experience to the personality, and Janet has made his remarkable contributions to future psychiatry by the analysis of mental instability in the border land of insanity. The British alienists have conservatively given attention to functional as well as to anatomical conceptions, notably Mercier. Hughlings Jackson has magnified his distinction as a neurologist by his recognition of the importance of the physiological factors in nervous and mental disease; his method of reasoning from functional characteristics to interpret structure, instead of inferring function through proofs in structure, is now attracting renewed interest.

These English views have long held a like formative place in America where they have not lost, but have sustained their force during the decade since the introduction of German teachings. Attention was first attracted especially to Kraepelin and the methods at the Heidelberg clinic with a consequent intensification of interest in morphological conceptions qualified by clinical observation. The painstaking studies of Meyer and Hoch approached the subject from the neurological side loyal to the scien-

tific method; through their work the conceptions of Kraepelin were submitted to the tests of practical co-operative study and experience with results anticipating his own later simplifications of "disease-forms." There was also, not only the establishment of collections of admirable clinical records, valuable for further study and analysis in future, at the McLean Hospital and the Worcester Insane Hospital where this special work began, but the extension of this clinical method to many other hospitals. Later in the movement came the different interpretations of psychiatrical problems by Wernicke and Ziehen,—the latter with an especially hopeful attitude toward psychological explanations. There has appeared a tendency to change in the views of these German teachers, of whom it is said they "have emancipated psychiatry from the peculiar position of an adjunct to neurology,"—a position for which the claim has long been made and is not yet yielded.

In the outcome of the decade in America the intensity of the new teachings is being qualified by independent studies of the problems involved, and the continuity of the current of earlier views here has been maintained. This former trend has persisted not only in psychiatry but it has appeared in neurology which was formed in, and has held to, pronounced morphological conceptions. Dana, Putnam, and Prince, for example, have taken special interest in the physiological and abnormal aspects of mental phenomena. Herter has made the most noteworthy of contributions to the future understanding of mental as well as nervous diseases, by studies of the chemistry of pathological physiology and the disorders of nutrition and metabolism in seeking the fundamental principles of practical therapy. Traceable here, as in general medicine, is the influence of the immensely important work of Chittenden; while this has little or no place in German teachings of neurology and psychiatry, the chemical side of the composition and activity of nervous tissues is receiving attention in England, in recent years, through the special studies of Mott and Halliburton which, however, relate distinctly to changes in structural disease. In America, the trend toward functional conceptions of mental pathology became embodied, with a special motive inspiration from general medicine, in the work of the McLean Hospital more than two decades ago. Early in this period, under the added influence of the new teachings of physiological chemistry, the

purpose was developed which has led, in the last half decade, to Folin's chemical investigations of disordered metabolism in immediate connection with the clinical study of the physical conditions and treatment of the insane; the parallel development, on both physical and mental lines, of the original purpose there is also finding its prime expression in the recent establishment of another clinical laboratory in which Franz is applying the physiological and experimental methods of the trained physiologist and psychologist. This particular development of the tendency to studies of the physiological aspects of psychiatry has been characterized throughout by its essential purpose of seeking guides for treatment of the physical conditions associated with functional mental disorders.

It appears that the turning away from the barrenness of histological provings is becoming general; the improvements of the clinical method and psychological experiment are inevitably drawing attention to the closer observation of the individual patient, and to the better study of the minor causes of his mental variations; this means a trend toward physiology. It is a safe prediction that pathological physiology is to be called to render such aid to psychiatry as it is giving in general medicine; and that the extraordinary advances in pathological chemistry will become available in mental diseases.

Such are some of the considerations suggested by a survey of the present aspects of the field of psychiatry. The changing attitude of psychiatry toward psychology is of great significance. These circumstances guide the inquiry into the conditions and causes of the present position of psychiatry.

The Relation of Psychiatry to General Medicine.

Psychiatry belongs to general medicine.[4] This view has been presented in the annual reports of the McLean Hospital since 1882;[5] my first statement of it, in the report of that year, was to

[4] Cowles, E., Advanced Professional Work in Hospitals for the Insane, Am. Jour. of Insanity, Vol. LX, 1898; The Mechanism of Insanity, ibid., Vols. XLVI, XLVII, XLVIII, 1889-91; also The Shattuck Lecture, Neurasthenia and its Mental Symptoms, 1891, Bost. Med. and Surg. Jour.; Mental Symptoms of Fatigue, Trans. N. Y. State Med. Assoc., 1893.

[5] Cf. An. Rep. 1882, 1889, et seq.

the effect that the physiological basis of the treatment of the insane lies in the fact that the normal functions of the cerebral organ may be only temporarily disturbed or only partially impaired, whether by transient disorder or pathological change; and the consequent fact that, in most cases, some degree of normal function remains. This principle was stated to be in accordance with the most important gain of modern pathology, the modern conception that "Disease is, for the most part, normal function acting under abnormal conditions."[6]

Mental diseases, in their study and treatment, include more than is contained within one branch or department of general medicine by having to deal with the mental effects of pathological conditions of the whole body; psychiatry is not limited especially to the nervous system with its central organ which has functions of a wholly different and higher nature than those of any other organ. There are functions of the brain other than the common ones of receiving impressions and reacting uniformly upon them like a reflex mechanism; by its mental function it receives impressions, retains and recalls its conscious experiences, selects from and rearranges them, and in new and orderly forms initiates and controls the processes of motor expression. The psychiatrist newly attempting the precise study of mental symptoms is confronted, at the outset, with the oldest of problems, the relation of mind and body. If he turns to physiology and neurology for light upon the physiological terms, mental and physical, of his problems he meets everywhere such statements as that of Wundt: "in matters psychological the naturalist can only affirm that psychological phenomena run parallel with physiological facts, but that on account of their different natures he has no prospect of ever bridging the gulf between the two." Edinger[7] writes, "We have no idea how it happens that a part of the work done by the nervous system leads to consciousness." Lloyd Morgan[8] offers the following practical conclusion: "One of the difficulties is that of conceiving how mind can act on matter, or matter on

[6] Dr. Gairdner, Presidential Address, Brit. Med. Psych. Assoc., Jour. Ment. Science, 1882.

[7] Edinger, L., Brain Anatomy and Psychology, The Monist, Vol. XI, 1901.

[8] Relation of Mind to Body, International Quarterly, Vol. VI, 1902.

mind. * * * * Let us at once confess our ignorance of the nature of the intimate relation of the one to the other. But certainly in many cases the observed facts show that our ignorance notwithstanding, they *are* somehow related. * * * * And since we cannot know the nature of the relationship, let us be content to seek for some of its conditions."

The psychiatrist is a physician who should take his point of view in a field even broader than that of general medicine in its largest sense, and not within the narrow limits of any specialism which may seem to include the sphere of mental activities. He has to deal with the physical effects upon the individual of all the influences that act upon him in his environment, and that enter into him from without, or are engendered within, which make for the maintenance or impairment of his vital processes. Such physical influences contributing to conscious experience have their mental effects; the psychiatrist must not only seek to understand the physical changes and effects but he must deal with the patient's consciousness of them; and the more subtle influences that affect the subconscious mental life. The physician must study not alone the influence, upon the mind, of the body in health and disease, but also the external physical, social, and moral conditions of the environment unfavorable to mental health and growth. It is in association with this broader view of general medicine that, with respect to mental disorder, he must seek explanation on the physical side of the organism, and turn to expert research for such aid as can be given him by the contributing sciences.

The field of the medical sciences is as wide as that of biology, which comprehends all the interdependent phenomena of mental and physical life; the abnormal must be referred to the normal. The first recourse of the psychiatrist is to physiology whose domain is the study of the forces or functions of living matter. There are no symptoms until there are deviations from normal function; without functional activity disease is impossible.* On the side of normal life, living substance necessarily presents the

*Cf. Orth, J., Relation of Pathology to Other Sciences, Am. Medicine, Vol. IX, 1905. "When there is no functional activity and thus no deviation from normal function there can be no disease." Published while this paper was in manuscript.

conditions of structure, form and function; these conditions are primary and disease is not necessary to the existence of living substance. Here the general physician finds himself involved in the contention between the sciences of physiology and pathology; the psychiatrist needs first a normal standard in his knowledge of general physiology, and all that he can learn of mental physiology and its relations to its mechanism, structure and form. Psychology lays open to intimate study the facts of the mental life; on the anatomical side we can know little, and that little explains nothing of the relations between mind and body. It is at this point that the physician must choose his point of view and form his conceptions of fundamental principles. If these are true they should fit all discovered facts, whether of function or structure, and will lead to advancement of his knowledge; if not true they lead to conflict and confusion, and obstruct progress. It is necessary to examine the mutual relations of the biological sciences to know their relative value to psychiatry.

The Position of Pathology and its Influence Upon Modern Psychiatry.

The science of pathology, with the justification of its brilliant achievements, holds itself to be fundamental to the medical sciences. Its elucidation of the phenomena of disease and its results puts it into inseparable relation with life. It claims that its conceptions comprehend all of biology, for on all sides it bears essential relations to the subsidiary biological sciences. Deviations from normal structure and composition of the body, and from the normal functions of its parts, are held to belong to pathology; in this view the study of structural variations in the evolutional and the developmental processes, from the normal in primordial and embryonal forms, may explain inherited and congenital disease, and, as a part of pathology, throw light upon morphology. Physics and chemistry, as they underlie both function and structure, contribute to the explanation of pathological change, and the disorders of function caused by disease; and pathological physiology and chemistry, whose importance is now receiving growing recognition, are to be regarded as subsidiary to pathology and dependent upon it. In the sphere of general pathology, dealing with function, it finds its duty to be "to cor-

relate symptoms with structural changes and trace the connection between them."

The science of pathology, presenting by its salient aspects such claims to the physician who seeks for light upon the problems of psychiatry, reveals a changing history. The leadership of the pathological-anatomical school in France passing over to Germany culminated in the "cellular pathology" of Virchow, this being founded upon the principle that the cell is the unit of structure and function and that all vital processes are to be referred to the activity of the cells of which the body is composed; they are the "factors of existence." This includes the phenomena of disease and all alterations of the organs and tissues, the principle being that whatever acts upon the cell from without produces a change, either chemical or physical, in the cell structure, and disease is constituted of such changes. These principles became the foundation of the "exact medicine" of the present day. Griesinger first established modern psychiatry upon the exact basis of scientific research and pathological principles, and through Meynert pathological-anatomical teachings were greatly advanced; following them it was in such an environment that the latest schools of psychiatry had their beginnings with an immediate inheritance of its morphological conceptions as the fundamental criteria of scientific truth. Such were the conditions of the inception of the current teachings, based upon a rigid morphology. The German schools of psychiatry became the centres of interest and influence, and their characteristics have already been noted. In the history of the time from Virchow, Griesinger, and Meynert, to the present there have been momentous advances in the other biological sciences as well as in pathology and psychiatry. The two latter lines of research are being strongly influenced by the concurrent changes. There are some very recent and significant signs of changing views in psychiatry which possibly betoken the freeing of itself from the too rigid dominance of structural pathology.

The Relation of Pathology to Other Biological Sciences, Especially to Physiology.

Physiology, when it declared itself an independent science by breaking away from medicine and establishing its place in the

great realm of biology, entered upon a broader field of study of the functional side of life with its complex phenomena in the functions of all living matter. To morphology, as an equally independent science, belongs the study of the structure and form of living matter; it covers the whole field of anatomy in the special forms of zoölogy and botany. But physiology and morphology, which are closely woven together, are both built upon the foundation of the inorganic elements of inanimate matter with its controlling laws of physics and chemistry that govern the forces of inanimate phenomena. All these forces of animate and inanimate nature are bound together; from a biological point of view we do not know living matter without both form and function.

On the part of the physician the inquiry at this point is as to the true relations of pathology to the other biological sciences in medicine. The scientific foundation of pathology, the development of its work in the other sciences which it necessarily involves, support its claim to an equal place in biology with the other natural sciences.

Prof. Orth, in an address at Kassel in 1903, described pathology as consisting of two branches, anatomy and physiology. Although the great Virchow remained a pure pathological anatomist he contemplated the beginning of pathological physiology as the culmination of his endeavors; "one of his favorite themes was the establishment of pathological physiology, a subject which, to his mind, was the foundation of scientific medicine, and therefore of medicine as a whole." Practical medicine, according to Virchow, is co-extensive with pathological physiology; this is founded on pathological anatomy, clinical observations, experimental researches; its problem is the determination and investigation of bodily processes under abnormal conditions, of illness and its symptoms. Virchow's experimental investigations to clear up morphological characteristics of disease go only to the beginning, and Prof. Orth urged that better attention should be given to physiological methods for the determination and interpretation of functional disorders in the unhealthy organ; yet pathological morphology must remain the unchangeable groundwork of all medical knowledge and thought; its most important function is its purpose for the upbuilding of pathological physiology,

for the understanding of the living processes and their disturbances in the sick body.

Bacteriology in its marvellous progress leads investigation directly into the field of pathological physiology, and finds explanations in the normal physical and chemical reactions that belong to the normal cell physiology. Pathology, taking bacteriology into its special province, is engaged in the study of problems relating to the nature of disease. General physiology has shown that the physico-chemical reactions in living substances are fundamental and essential factors in the production of vital phenomena; it finds, in its investigation of the component elements of cell-substance, that in physiological chemistry is its chief aid in the explanation of vital activity and its disorders. Herter[10] reviews our present knowledge of the chemical defences of the organism against disease; it serves to emphasize the varied chemical activities of the cells, and to render more intelligible the phenomena of diseases that result from modifications or failure of these cellular functions. He says: "Modern pathology has made us familiar with the conception that disease is generally the expression of a reaction on the part of the cell to injurious influences. The only rational conception of the ability of the human body to defend itself against disease by means of chemical agencies is that these defences ultimately reside in the cells themselves. Many of the phenomena of disease are caused by the modification of function that occurs during the action of the cell in resisting injurious influences." Ernst[11] has shown that, notwithstanding the great obscurity of the subject and the somewhat conflicting theories, the point is maintained that in all reactions the cell activity intervenes at some stage of the production of immunity; and that most probably the reactions that occur are closely related to these that go on under the ordinary conditions of tissue metabolism. These considerations are consistent with the fundamental doctrine of cell physiology and pathology.

It appears from a brief survey of the history of pathology that when at first it was a part of anatomy, it was then pre-eminently morphological, and that this characteristic motive still prevails to a large degree. After it became independent, pathology con-

[10] Herter, C. A., Chemical Pathology, 1902.

[11] Ernst, H. C., Modern Theories of Bacterial Immunity, 1903.

cerned itself especially with deviations from the normal anatomical standard. It developed new relations with the other biological sciences as they attained existence, and like morphological problems arose in connection with them. There was mutual receiving and giving of aid, but anatomy was the parent science and the study of the concrete facts of structure being easier than ever-changing function, morphological conceptions have always kept in advance and pathology has held them to be essential in giving finality to its explanation and proofs. But, with the slowing of progress, as normal and pathological histology has approached the frontiers of present attainable knowledge, much of speculative theory has arisen in the endeavor to prove apparent and conjectural realities of structure by reference to the facts of physiological activity. The history of pathology reveals evidence in support of the conclusion that, from the beginning, the science of pathology has needed first the data of normal form and function in order to study their deviations; also pathology has been steadily tending to the finding of its ultimate dependence upon physiology. Aside from the results called disease from actual traumatism of cell bodies caused by extrinsic agencies there must be many transient conditions of intracellular rearrangements or molecular disorder, beginning with functional and defensive reactions, long before there can be any ascertainable structural findings. Such molecular changes, beyond the ken of the microscopist, might be assumed to be structural in fact; but the ultimate problem of the search for explaining principles thus tends to become a physico-chemical one. The facts of cell functions should hold an important place in the study of the varying agencies and influences of cell stimulation in the production of symptoms. The relation to physiology of the morphological side of pathology is especially instructive.

The Relation of Morphology Normal and Pathological to Physiology.

Morphology presents considerations of the highest importance which require special notice in this examination of the mutual relations of the biological sciences. It is granted that pathology, on the morphological side, is inconceivable without normal anatomy as its basis. Pathological anatomy, being dependent on

normal anatomy, belongs to the science of morphology. This science, with its great subdivision of embryology, has attained splendid achievements; in the course of its advancement in many specialized lines of investigation in plant and animal life, it has enjoyed the advantage of being able to study the problems of evolution and development in many quickly succeeding generations of vital forms. The scope of its observations has extended farther than from the point of view of medicine, and is reaching conclusions that may yet illuminate some of the dark places of psychiatry. The history of morphology has a special significance in its development cotemporary with other biological sciences; the changes in its course suggest a law of progress in scientific research that has operated in other fields. After the emergence of morphology, and of physiology, from the keeping of anatomy, the two new sciences entered upon equal domains in the realm of biology. Morphology asserted the independence of the science of form and structure from that of function; the doctrine was that form persists and function varies. It was characterized by the conception of a fixity of types, a rigid adherence to the study of mature forms which it labored to arrange in a perfected and systematic classification. With the breaking away from these rigid conceptions, during the last fifty years, the course of progress was in the study of the problems of evolution; leading through the investigations concerning the origin of species, it has come to the recognition of the supreme importance of the problems involved in the development of the individual, and of the biological laws that govern it; and the wide range of variations that may be produced in members of a given species. So in medicine, instead of clinical types, the differentiations of disease are becoming genetic and developmental in character.

In the morphology of plant and animal life it is agreed on both sides that they are subject to the same laws; in both plants and animals there are identical processes which are consistent with the significance of the cell-doctrine as being fundamental to morphology. In the close relation of form and function the modern conception is that the structural characters of which an individual organism is made up correspond to its functional characters; form characteristics can not be understood without considering the function characteristics. Physiological characteristics are trans-

missible in the same way as the morphological. The study of physiological cytology and embryology is revealing the mechanism of the transmission of qualities; with the aid of the experimental methods in the production of variations in both form and function, there is great progress in the understanding of the laws of descent and inheritance. The close relation of physiological and morphological characteristics proves that the problems of form and structure are also physiological problems. Physiological processes are influenced and often controlled by the conditions of the environment both internal and external; and it is shown that mental as well as physiological characteristics are inherited under the same laws. These brief references to the data of morphology serve here to indicate the trend of progress in this science; it points to the conclusion that influences which stimulate functional activity play an essential part in determining the processes of development and the resulting structural forms. The demonstrations of the dominance of the sensory over the motor side of the nervous mechanism is consistent with the fact that all movements are primarily a response to sensory impressions and are performed under their guidance. It follows from the teachings of Hughlings Jackson that cell-groups are thus formed by a process of education. All motor phenomena being responsive reactions to stimuli applied to the neuro-muscular mechanisms, the laws of use and habit influence functional activity and growth. The unity of all these sciences is also shown. Physiology and morphology have to do with interdependent manifestations of organic existence; there can be no disease until there is first normal life with whose physical sequels pathology has to deal. Inasmuch as the whole science of pathology must refer all its material to normal standards, both on the functional and the morphological side, a like freedom belongs to the minor province of mental pathology; psychiatry is at least justified in seeking directly its immediate explanations in the hopeful though neglected field of function.

The Pathological Conceptions of Psychiatry Stated in Terms Implying Morphological Ideas.

In such a survey as this, of so complex a subject, certain difficulties have appeared concerning special aspects of current effort,

in the field of the psychiatrist's labors. Allusion has been made to the remarkable fact of the disharmony between mental physiology and mental pathology. There are signs of the coming of better co-operation, but so far the general fact is that the psychiatrist borrows from psychology what seems fitting with his pathological conceptions, and applies some of its psycho-physical methods; at the same time he hesitates to use the data and even the terminology offered by expert investigators in mental physiology. The importance of care in the use of descriptive words has been mentioned; an inquiry like this draws special attention to this subject and some extraordinary facts are revealed that should receive further notice.

First among these may be mentioned the use of the word physiological; its frequent infelicitous employment by both pathologists and psychologists themselves, emphasizes the width and depth of the traditional gulf between mind and body. The distinction is commonly made between *psychical* phenomena and *physiological* phenomena and the designations "mental side" and "physiological side" are used to make the same contrast. Mental phenomena are themselves physiological, but the usage implies a distinct psychical element as an extra-physiological epiphenomenon, when such a meaning is not intended, and is therefore misleading. The mind event and the brain event are both physiological.

More remarkable examples of doubtful usage, universal in medical literature, and with far-reaching effects, are shown in the words "disease-form," "disease-entity," "disease-process," and "pathological process," which have already been mentioned. These words still suggest old meanings now wholly obsolete; this is so obvious that when thoughtful writers use such words "for convenience," the explanation is not infrequently made that it is not intended to imply that disease is a malign entity which invades the living body and works its evil course. Yet, as usage sanctions it, writers continue to employ the frame-work of words which would once have expressed the ancient parasitic personification of disease. While, in the science of pathology, this extreme conception is corrected by explanation, such words in their modern usage still embody and positively convey the sense of an underlying morphological counterpart of the symptom-complex that runs

its course of progressive degeneration as a disease and reveals the terminal changes in post-mortem findings. To speak of all disease in terms used in these senses is to emphasize structural conceptions of pathology, and thus to impede the progress of the reform which is clearly seeking to give adequate attention to functional conceptions in place of the dominating demand for mature types and forms, and classifications.

It would be interesting to follow out the history of the usage of these verbal embodiments of whole theories. Perhaps a reference to main points will be enough to indicate the purport of these observations. First, as to the nature of disease, it can not be correctly conceived as a state of disordered activity or disorder of a process in an *active* sense; there is a condition produced by a defensive contest between the forces of the living cell and the harmful agencies; it is not a state of perturbed activity but the result of it in diseased organs or tissues. The causes of disease are extraneous and unnecessary to cell life which can exist without disease. The only true *process* in living organisms is the physiological, or life process; the forces that cause the reactions called vital phenomena are inherent and are governed by the uniform laws of an invariable order of nature; like effects result from like causes and conditions, and the life process presents the attributes of uniformity and continuity controlled by the laws of descent. Reproduction is an original property of living matter and life is continuous, and death is not due to such a property; this is a proposition in which there would be a general agreement with Weissmann. Roger[28] reduces the conception of death to the formula: "Death is the result of an arrest of cellular nutrition; whatever the multiple proceedings are that are called into play, the final result is always the same."

A "disease-process" or "pathological process" can not be conceived as comparable with the physiological process; the causes of disease being extraneous to normal cell life, are accidental, multiple, discontinuous, without uniformity. It is consistent with this that even in the problem of tumor growths there are some essential explaining facts; whatever of the various theories may be employed to account for them, they are not indwelling entities

[28] Roger, G. H., Introduction to the Study of Medicine, Trans., 1901.

but depend for their existence upon the inherent vitality of the parent organism, acting under abnormal conditions. When the organism dies the new growth dies; there can be no disease without prior normal life.

When applied to functional disorders, the assumption of a necessary correlation between a "disease-form" and an underlying structural "disease-process" goes beyond the province of morphological pathology; it involves the intracellular changes of physiological chemistry. It is obstructive of a true conception of the wide variations of function that belongs to molecular nutritive and metabolic changes due to variations in condition, irritability, intensity of stimulus, etc., though affecting the same physico-chemical operations by the same agencies. But an authoritative insistence upon the "disease-form" and "disease-process" ideas, with respect to all psychoses, has undoubtedly tended to distract attention from a free consideration of functional conceptions of mental pathology. These and kindred forms of words, with their distinctly morphological stamp, show the character, in some degree, of changing conceptions of pathology. They are kept in use by their convenience; and they appear to be in harmony with certain accepted theories and doctrines concerning the nature of disease and death, and their relation to life. The influence of these doctrines is so great as to require examination here.

The difficulty of determining a sharp limit between life and death has been stated by Verworn[28]: there is no definite time at which life ceases and death begins in a complex organism, for one set of cell complexes may survive another for a long time; but "there is a gradual passage from normal life to complete death which frequently begins to be noticeable during the course of a disease. Death is developed out of life." "Thus death does not come to the cell immediately, but is the end-result of a long series of processes which begin with an irreparable injury to the normal body, and lead by degrees to a complete cessation of all vital phenomena." It is reasoned that "life and death are only the two end-results of a long series of changes which run their course successively in the organism"; also that "death undergoes a development; normal life upon the one hand and death upon the

[28] Verworn, M., General Physiology, Trans., 1899.

other, are merely the remote end-stages in this development, and are united to one another by an uninterrupted series of intermediate degrees." This transition from life to death is termed *necrobiosis,* a word introduced into pathology by Virchow and Schultz; it is understood to mean, according to Verworn, "those processes that, beginning with an incurable lesion of the normal life, lead slowly or rapidly to unavoidable death."

Thus the principle of necrobiosis is to be studied in the cell as well as its vital phenomena; and it is held to apply also to the death of compound organisms. By an extension of this conception it explains the condition of natural death in old age, which thus appears to be physiological. Senile atrophy, which leads finally to death from the feebleness of old age, is to be regarded as simply the end-result of a long developmental series; death in old age is the natural end of an unbroken development and its causes exist in the living organism itself. Life itself never becomes extinct, but there is a continuity in its descent; yet living substance itself, in the form of bodies, is continually dying.

Compare with the foregoing the views presented by Gowers[14] in regard to "diseases from defect of life" to which he gives the designation "abiotrophy" to distinguish a newly differentiated clinical group of conditions and symptoms; he acknowledges Mott's cotemporary recognition of these conditions. The conception is that of "a degeneration or decay in consequence of a defect of vital endurance;" it indicates a failure of life-processes due to defective vitality which seems to be inherent. It is recognized that many degenerative diseases of the nervous system are a result of such defect. The idea is expressed by Mott:[15] "the neurones of a particular system die prematurely, owing to an inherited or acquired want of durability, and the regressive process of decay may be looked upon as a nutritional failure on the part of the same cells to maintain that metabolic equilibrium essential and correlative to functional activity." Every nerve cell of the human body is conceived to be "endowed with a specific durability whereby in the health-perfect organism every neurone

[14] Gowers, W. R., Abiotrophy, Lancet, 1902.

[15] Mott, F. W., The Degeneration of the Neurones, Croonian Lectures, 1900.

possesses an equally adjusted vital energy." This is a statement of one of the two ways in which the regressive process occurs, the other being "the metamorphosis incidental to old age manifested by a gradual and general enfeeblement of the functions of the whole nervous system." "In contradistinction to this normal senile decay are the premature pathological processes of decay attacking groups, systems, or communities of neurones subserving special functions." "The process may be regarded as the inverse of development;" in harmony with these views Hughlings Jackson is quoted in regard to the helpfulness of considering diseases of the nervous system "as reversals of evolution, that is, as dissolution." Mott conceives that the process of primary degeneration is, morphologically, an evolutional reversal commencing in the structures latest developed.

In the extensive literature concerning the life-processes and their failure in disease and senility other diverging views may be cited, but the purpose here is only to indicate certain ideas and reasonings that bear upon the pathological conceptions with which psychiatry has had to labor. With respect to physiological old age ending in natural death the contending view is that the decline of life manifests the summation of the effects of external injuries, the damage of wear and waste, and is not something different and apart from disease. It is to be noted in the doctrine of necrobiosis that the idea of a "disease-entity," with its course and process parallel and antagonistic to the life process, is avoided by conceiving life or the life-principle as the sole producer of two series of developmental processes, one of which leads to its end-result in the existence of normal being; this life-process is then conceived as turning against itself in another process of producing a series of decrements that reaches to the end-result of non-existence. One result must exclude the other, and we admit that death is the common goal; the life of every living thing ends in death and there is only one end-result,—death is developed out of life. But by shifting the position to the larger view the attempt is to set up a dual conception of two processes, equal, parallel, antagonistic yet conjoined. The truth is that the whole of life comprehends all living nature; the individual parts that bloom, fructify, and perish, and the fragments chipped and sloughed off from the great embodiment of life in matter, are always dying

or dead, but the one chief process of life goes on, and we say that life is developed out of death. The minor casualties of injury and disease represent the chance encounters of living substance, in its struggle for existence, with the discontinuous opposing forces of the world of living and material things. Living substance dies, but life is immortal. We may describe, in such figures of speech, the dual developmental processes with their contrasting end-results.

The paradox of the "processes" appears also in the application of the doctrine of abiotrophy which, of itself, helps to make clearer the terms of the problem by the conception of a failure of nutritional energy with a consequent limitation of the durability of the organism and of the length of life. In applying this doctrine to certain pathological changes it is said that the overgrowth of interstitial neuroglial tissue, when the nerve elements decay, is in consequence of the fact that the two elements have "a common but inverse vitality;" when the nutritional energy fails to maintain the growth of both, the more highly specialized tissue ceases to live, while the less specialized tends to overgrow with the tendency of the former to decay. It is explained that these "tendencies are in the opposite direction, but they seem to be coincident results of the same vital condition."

In the many well-known conditions of constitutional weakness and instability it is easy to understand the nutritional failure to develop normal growth and efficiency of function, or to maintain them, and the consequent recession of the developmental processes, even to the cessation of life. The doctrine of dissolution as characterizing the many conditions of such recessions is clearly consistent. When biological conceptions are invoked, it is also easy to comprehend the general principles of development whereby, through physiological reactions of the organism, there are adaptations and modifications of characters due to changes of environment and favorable to life and health; it is intelligible that through use higher types of characters may be produced, or through disuse recessions to more primitive types, under the causative influences of the environment, and all this may be within the physiological limits of the organism as expressions of the processes of life. In the domain of biology it is, no doubt, helpful for descriptive purposes to conceive of the developmental

forces as acting in an inverse direction, producing the effects of reversals and regressions. But when this latter conception is applied to pathological conditions, it is in harmony with our prevailing modes of thought in medicine that there is conceived to be an attack, as of some harmful agency, upon the living organism; a pathological process of degeneration is supposed to ensue which is a regressive process of decay, and this implies its active going backward against the normal tendency of the nutritional energy to maintain life and growth. As a further explaining principle the conditions of acquired or inherited defect are conceived, and a process of degeneration of which "heredity" is the motive force; thus the development forces turn against themselves and working in the inverse direction produce decay. It is the all-pervading disposition to seek an immediate cause for every effect, and it is easy to describe agencies and processes. When the stamp of "degeneracy" is fixed upon a fated organism we commonly think of its possessor as a "degenerate" descending to inevitable doom.

Is it not evident that there is a misleading ambiguity in the prevailing usage of the conception of "processes"? It is necessary to the notion of a process that there is a passing over of one set of phenomena into another, and this constitutes a change.[20] A "process" is constituted of a series of such changes when one stage or aspect of the process necessarily succeeds upon another. The action of a causative force or stimulus is essential to the change, as in the biological processes. The requirements of the conception of two coincident processes appear in the principle of the psycho-physical parallelism in the relation of mind and body. It being the general fact that certain changes in those brain and nerve processes with which consciousness is associated are always accompanied by changes in consciousness, and the converse being true also, then certain other scientific principles are involved: (1) the principle of *equal continuity,* with no breaks in either series of changes,—if one series is continuous the other must be continuous also; (2) the principle of *uniformity,* when certain phenomena in each series in brain-process and conscious state are essentially associated, then the concomitance of those

[20] Baldwin, J. M., Development and Evolution, 1902.

terms may be looked for on all other occasions; (3) the principle must be a *universal* one,—whenever we find a series of phenomena in either of the parallel trains of events the principle of parallelism has its application. Structure and function must exist before there can be any disease; the phenomena of life represent the supreme process in animate nature; the phenomena of disease and degeneration appear as the results of discontinuous interferences with the life-processes in which "normal function is acting under abnormal conditions;" the assumption of a "disease-process," or of a "pathological process" in the same sense, fails to meet the essential requirements of a "process,"—it is certainly not comparable with the life-process. If we must speak, for convenience, of "pathological process" and "degenerative process," the terms should be used only in a very narrow sense of comparatively transient interferences, or in the sense of referring to normal function acting pathologically.[17]

To the inquiring mind the contradictory presentations of these matters is confusing and creates difficulty. The subjects are, in their nature, complex, and our knowledge is limited, but much ambiguity is undoubtedly due to the lack of precision in the statement of the terms of the problems. One of the most common obstacles to clear thinking appears to arise out of the fact that for every predicate implying action we have to think of an actor, or causative agency, and our minds habitually conceive of some form of personification of such an agent as possessing motor and motive attributes. Thus we think of life and death, and artists picture them, in human forms; we are prone to dualistic conceptions and the mind delights in such paradoxical phrases as, there can be no death without life; no disease without health; no evil without good. The use of the active predicate abbreviates expression, and enlivens speech. Professor Sanford,[18] discussing the influence of physics on psychology, notes the fact that, as the result of man's long primitive practice, his habits of thought are

[17] The writer's views of the inadequacy and misleading influence of the "disease-process" conception, as a question in psychiatry, was first presented to the American Medico-Psychological Association at its meeting in Washington in 1902, in an unpublished paper on the principles of mental pathology and the nature of mental symptoms.

[18] Sanford, E. C., Psychology and Physics, The Psych. Rev., Vol. X, 1903.

objective, and the language he uses is saturated with physical connotations and metaphors. It is not easy for even the best of us, he says, to keep clear of this inveterate physical-mindedness and the subtle suggestions of language; we help out our thinking by material figures and feel a sort of dumb compulsion to make our psychological theories accord with physical requirements. Ebbinghaus is quoted as describing the older psychology as distinctly "mechanistic," many analogies from familiar material processes being used in the exposition of mental phenomena. In regard to essentials, Professor Sanford thinks it may be said that psychology has outgrown this method. But, turning to our own field of the medical sciences, the ruling tendency of our thought and language leads to the conceptions of "disease" and "process," for example, in terms implying immediate causative agents. The familiar conceptions of a process of anabolism and a contending process of katabolism in the cell are treated as the analogues of the life-process and death-process. The analogy is extended to include in this conception the fact that in the whole compound organism the anabolic processes overbalance the katabolic till middle life, when the two processes are more nearly in equilibrium, and that thereafter katabolism predominates more and more in the normal decline of old age. It is held that in the broadest sense the process of senescence begins with the beginning of life in a progressive diminution of the power of growth; and with the progressive waning of the vital powers the leading somatic changes accompanying old age are atrophic and degenerative. The same conception concerning the anabolic and katabolic processes is equally legitimate concerning the idea that an inherent tendency to degeneration is transmissible; the inherited constitutional weakness and diminution of vitality may be interpreted as belonging to the series of changes which imply a process of dying continuing through several generations.

There appears through all these reasonings, the prevailing method of thinking in terms of "processes." The inquirer is moved to ask whether the normal processes of anabolism and katabolism are not both essential to the maintenance of a health-perfect cell and both, therefore, parts of the normal life-process? We do not think of the most healthily active cell as one most vigorously dying. If we consider the physico-chemical changes

in the cell inclusively as a process of metabolism, it is consistent to think of the normal building up and breaking down of complex compounds in growth, work, and repair as harmonious, and not antagonistic, operations. Hering separates assimilation as only a qualitative chemical change from growth as quantitative, and in like manner dissimilation from atrophy. As to the transformations in the cells and the overwhelming number of substances excreted from them, little is known of the processes by which these are derived; but many products are formed in both the ascending and descending portions of the metabolic series. Disordered and imperfect adjustments of the molecular arrangements of living substance may affect and arrest both anabolism and katabolism; defect of the latter and not its predominance can be conceived as a cause of the death of the cell.

In physiological theory the distinction is made between death of the tissues and somatic death: in the former, it is reasoned that constantly throughout life the molecules of living matter are being disintegrated and whole cells die and are cast away,—and that life and death are concomitant; in the latter, death occurs when one or more of the organic functions is so disturbed that the harmonious exercise of all the functions becomes impossible. This distinction has been referred to, and further inquiries are suggested here. In respect to the death of the tissues, the "unit cell" being an organism of high complexity as to its structure and function, and its life-process, is not failure of this life-process of the co-operative adjustments within the cell truly analagous to the failure of life, or somatic death, in the whole compound organism? In this connection the question again arises as to the concomitance of the processes of life and death,—the latter being theoretically analogous to the constant disintegration of living matter. Hering's idea that assimilation and dissimilation are distinctly separate from growth and atrophy permits the former to be regarded as one intimately combined and normal metabolic process in a working cell, having no theoretical significance except as wholly contributing to the maintenance of the function of a health-perfect cell. The daily shrinkage of the working and fatigued cell may be regularly made up by rest and nutrition; this is not atrophy, either simple or degenerative, for the continuity of cell-life may be unimpaired and only the labile molecular inclu-

sions be changed by normal use which promotes the health of the cell. On the other hand, the function of growth, being of a more primitive type, would appear to contain the explaining principle of the life-process as contrasted with the work-process. Consistent with this appears to be the sharp differentiation made by Adami between cells which have the habit of growth and those which have the habit of work; these two functions cannot be exercised by the same cell at the same time, and a normal working cell may revert to the type of a vegetative cell. This implies that cells of the primitive type having only the function of growth, their "work" (in the common usage of the word), is without external manifestations of energy; but that the function of work, which is the power to store potential energy within and to produce kinetic energy in external work, belongs to the highly specialized cell as an acquired character which it may lose. This being true we may understand that assimilation and dissimilation, in the limited sense employed by Hering, constitute a special kind of inclusive metabolic process different from the molecular changes, perhaps less complex, productive only of growth. It is not conclusive that katabolism typically represents destruction of life though it means changes of substance in which life exists. These considerations suggest questions that are not in harmony with the generally accepted theory of life and death as concomitant processes based upon an assumed analogy to the physiological processes of the healthy living cell.

This inquiry is intended only to consider some examples of current theories with the question whether they can be resolved into more simple conceptions. The life-process being conceived as the one supreme "process" in living organisms, this implies its maintenance by causative forces; assuming each individual to be endowed with a given vital durability, determined by antecedent conditions and subject to modifications due to favoring or adverse influences, the life-process reaches its possible attainments and finally fails in the struggle for existence. Injury, interference with normal function, overuse and disuse, disease, and the causes of the changes of senility present alike adverse influences which the organism fails to overcome. We must speak of disease and use its meaning as referring to results in diseased parts, organs, or tissues; and we may commonly think of the word

as implying a combination of disorders of functional activities which may or may not be associated with ascertainable structural changes. But it should be remembered that we are thinking of a patient and not a "disease." There is no disease-process; no causative forces exist in nature that induce and carry on processes of degeneration and decay; gradual failure is the summation of the failures of community work due to the complexity of the organism, each organ being subject to the harmful influences of the functional failure of other members of the community. There may be deterioration of function, and degeneration of structure in the sense of failure to maintain it; there may be also regressions or rather recessions of results, but no active pathological "process" of going backward in the structural reductions called "degenerative." These considerations do not support the idea of a "physiological old age," based upon the conception of a normal process of degeneration or decay as though the results of senile conditions in structural changes are different from disease. This doctrine of natural decay and death makes great trouble in dealing with senile conditions in medico-legal cases; and in like cases concerning degeneracy in earlier life the most contradictory and confusing notions prevail. They are not in harmony with practical experience. This is largely due to the adoption in psychiatry of generalizations in regard to heredity not yet warranted by the science of biology. The morphological ideas in the prevailing pathological conceptions, and the descriptive terms employed, have undoubtedly obstructed the progress of psychiatry. From all such preconceptions the psychiatrist should be wholly emancipated.

A functional conception of pathology is not in conflict with a pathological conception in the sense of the long-used distinction between functional and organic diseases. The objection to this is not lessened, but the fault is not with function. Life and the science of physiology are first; function and all that pertains to it are primary facts of the activities of normal life. Much disharmony in the conceptions of pathology has been due to the setting up of ideas of "organic diseases" as the chief factors in pathology, and the minimizing of function as worthy of serious scientific consideration. Our conceptions of function are uncomplicated as relating simply to the modes of action of the several

parts of the organism; but we must think of organic disease in two ways, of changes of structure in results, and of changes of action in "process." The functional factors are necessary to organic disease and their distinction and true relation should be discovered in their combination. The organic changes of disease are the sequels of interferences with the prime process of normal life.

Physiology and its Relation to Psychology.

Physiology acknowledges its debt to Johannes Müller, who mastered the two great sciences, morphology and physiology, and was a teacher of pathology. He took an active interest in psychology, regarding physiology by empirical methods as essential to advancement. After Müller's death, nearly fifty years ago, the fields of his scientific work were divided by the specializations through which the present marvelous advancement has been gained. Physiological chemistry became independent of physiology; and physiological psychology developed on the lines of psycho-physical experiment. It was then that mental physiology should have made its union with mental pathology. It is easy to see that psychology tried to accomplish this by its attempts to find a morphological basis for its investigations through the experimental method, but the field for this was limited. Psychiatry, under like limitations by its morphological attitude, met the invitations of psychology with inherited distrust of a functional pathology; psychology was turned upon itself, and also, much of its own choice, sought and found open ways back into the attractive regions of the investigation of psychical function and philosophy. The latter phase of psychiatrical interest in experimentation has been mentioned, and is full of promise, but such movements require years of time. The method of exhaustive study of the clinical expression of psychical reactions through speech and behavior, and the use of experimental tests which bring out individual characteristics and their variations, are gaining a share, which must increase, of the attention and interest heretofore centered in the pathological laboratory. This is a new and definite revelation of a tendency toward the study of a functional conception of pathology in psychiatry.

Psychology is still kept apart, however, from the practical study

of mental pathology; this is probably, in part, its own fault; although some students of psychology have shown the requisite interest, there is a lamentable want of opportunity. What would really be the most promising interest in psychiatry should be found in the establishment, in hospitals for the insane, of true experimental psychology, with physiological methods applied clinically, according to the principle of using instruments of precision in other clinical work.[19] The observer of these clinical manifestations trained both as a psychologist and physiologist would find many new variations of phenomena not seen in the normal subject. A hospital for the treatment of mental disorders is a laboratory of itself where nature makes experiments in the excitation, suppression, and combination of naturally correlated psychical and physical reactions, giving many clearer displays of their nature, both by their intensification and absence.

Mental diseases are peculiarly and essentially constituted of mental symptoms; the study of their phenomena must refer them to mental physiology, for the laws governing vital phenomena under abnormal conditions are not different from those of normal life. The study of mental physiology under pathological conditions should be helpful for both psychology and psychiatry.

This inquiry being assumed to be free from all preconceptions as to the true nature and place of mental pathology, and as to forms and names of mental diseases, it may be turned to an examination of the relations of psychology, or mental physiology, to all of the associated reactions of the physical organism. This is the necessary basis of pathological physiology for psychiatry. Approaching the subject newly from this point of view the physician should seek to inform himself concerning at least the immediate facts of mental function and the accepted postulates of

[19] For an account of the beginning of the present laboratory methods, both psychological and chemical, at the McLean Hospital in 1889, see "Les Laboratories de Psychologie en Amerique," by E. B. Delabarre, L'Annee Psychologique, 1895; also "Laboratory of the McLean Hospital," by G. Stanley Hall, Am. Jour. Insanity, 1895. The subsequent development of the pathological laboratory and the clinical methods,—of the laboratory for pathological chemistry in 1900,—and of that for pathological physiology and psychological experiment in 1904, constitute a true psychiatrical clinic of a special character, designed from the outset for the investigation of the functional conditions of mental disorder.

psychology. But in preparation for such a study it should be recognized that mental physiology is included in general physiology as concerning a part of the vital activities of the living organism; also that certain general modes of action in the body always have a part in mental function. Some of the symptom-factors of mental disorder have their genesis in conditions that affect primarily other parts of the organism than the brain. General physiology therefore claims the attention of the psychiatrist to certain essential principles whose importance can only be indicated here by mentioning some of those of immediate interest; the purpose is to present some of the physiological reasons for the proposition that the problem of psychiatry lies in the functional psychoses.

A distinctive feature of modern biology is the fundamental conception of a living body as a physical mechanism (Huxley); underlying all the phenomena of the animal organism is the reflex action of the nervous system, and physiologists generally agree to consider every action as aroused by some cause or stimulus (Sedgwick); under the biological conception man is an organism for reacting on impressions (James). The nervous and mental mechanisms being regarded as constituted of three minor ones, their action appears in a sensory,—a central or transformation,—and a motor process; in the central process part of the work done by the nervous system leads to consciousness; the response to a stimulus may be a muscular contraction, a secretion in a gland, a vascular change, or even a trophic or metabolic influence,—all pertaining to the centrifugal system. While reflex action is not conscious action, one may be conscious of the act, and in many cases conscious changes precede, accompany, or occasion the change. The most important reflex of all is commonly ignored, viz., that which provides for the constant readjustment of the parts of the system to each other, by virtue of which the entire mechanism is receptive even to minimal stimuli. This may be termed the *neuro-equilibrium reflex*. The tone of the nervous system is this wonderfully complex adjustment of inhibition and stimulation. Every metabolic process in all the nerve cells exerts its influence on the entire nervous system. One of the most remarkable reflex associations is that between vaso-motor alterations and the seat of the emotions, which are thus intimately involved with the viscera and vessels in their minute connection with the sympathetic system. This association has a most important influence in the mental sphere, though beyond this fact little is yet known of the physiological basis of these reactions.[*]

The intimate connection of mental states and the physical reactions of the whole body is well recognized by both physiologists and psychologists;

[*] Cf. Baldwin's Dict. of Philosophy and Psychology.

it is of fundamental importance in psychiatry. Lombard[21] describes the cells of the central nervous system, during waking hours, as continually under the influence of a shower of weak nervous impulses, coming from the sensory organs all over the body; moreover, activity of brain-cells, especially emotional forms of activity, leads to an overflow of nervous impulses to the spinal cord and an increased irritability, or, if stronger, excitation of motor nerve-cells. There is a constant inflow from the environment of a vast number of excitations ordinarily disregarded by the mind but all the time influencing the nerve-cells; the effect of this multitude of afferent stimuli, in spite of their feebleness, is to cause the motor cells to continually send delicate motor stimuli to the muscles and to keep them in the state of slight but continued contraction or tension of *muscle-tonus*. In these mechanisms is the seat of the kinæsthetic sensations and the functional alterations that play so essential a part in contributing to the well-known symptom-factors of the "sense of effort" and "inadequacy," and motor "retardation" and "excitation."

Some of the physiologists have given much study to the relation of mental and physical states. Sherrington's[22] discussion of common and organic sensation and the contributing cutaneous sensations, has an extraordinary interest for psychiatry. Common sensation is understood to mean that sum of sensations referred, not to external agents but to the processes of the animal body, and these sensations possess strong affective tone. Total common sensation is the result of many component sensations, and those that arise in internal organs and viscera contribute a great deal to the total sum. Affective tone is the constant accompaniment of sensation; every form of common sensation is based on perception of an altered condition of the body itself. In connection with this comes the fact that all forms of common sensation present significantly pre-eminent attributes of physical pleasure or physical pain; and all are linked closely to emotion.

The elaborate researches of many observers in recent years concerning the nature of the muscular sense, the senses of touch, pain, and temperature, and their special mechanisms, strengthen the common fact that their sum contributes to the effects upon mental feeling-tone. They are in their nature productive in part of the organic sensations. Ribot[23] has studied, more than anyone else, the psychology of the emotions and the logic of their mental and physical reactions; he describes the presentations in the conscious mind of organic sense as constituting a vast aggregate of impressions arising from within the organism and continually flowing towards the superior nervous system; it is this region of subject consciousness that

[21] Lombard, W. P., The General Physiology of Muscle and Nerve, Am. Text Book of Phys., Vol. 2, p. 143.

[22] Sherrington, C. S., Cutaneous Sensations, Schafer's Text Book of Physiology, Vol. 2, p. 969, et seq.

[23] Ribot, Th., Diseases of the Personality, and the Psychology of the Emotions.

gives the consciousness of being,—the sense of personality. The sensations from the special senses are intermittent, of high intensity, and small in volume compared with the voluminous though faint, continuous, and all-pervading commotion produced by the organic sensations. These are intense enough, however, to be susceptible in health of psychical interpretation as a sense of well-being; from their disorders and intensification come the sense of ill-being. These are the long recognized changes of coenesthesia. Professor James has shown the intimate relation of the emotional tone to bodily states; and Professor Ladd makes clear the usefulness to psychiatry of a study of the affections and emotions in their relations to the train of ideas, and to the different bodily organs; also the reflex effect of the changes in these organs upon both the feelings and the ideas.

Underlying all these physiological phenomena of the living organism is the primary attribute of irritability. All the functional phenomena being influenced, within normal limits, by changes of irritability in the central, peripheral, sensory and motor mechanisms, and these changes being dependent upon the processes of nutrition and metabolism, and upon conditions of use and disuse, rest and fatigue, etc., the alterations of functional efficiency in the associated reactions of mind and body make the study of cellular physiology imperative for psychiatry. Some of the most commonly observed and characteristic symptoms in mental diseases may be referred to such functional disorders in the physical organism.

The healthy organism being fully constituted in structure and function for its work, when put in use begins immediately to be subject to modes of action which are the effects of its own activities; in other words the living organism acquires functional characteristics as the immediate effects of use. Some of the common physiological laws have a special importance here because they govern the work of the physical mechanism and therefore of all correlated mental reactions, not only in health, but in disease, as long as any functional activity continues.

(1) Association and Habit are fundamental in mental life; in respect to the association of ideas it is not the ideas that associate but the elementary processes of which the ideas are composed; on the physical side the law reduces to the law of habit (Titchener). Memory is an associative process; mental reactions (including perceptions, ideas, emotions) are associated with their physical correlatives and motor consequences. Habit is closely related; it is the functional disposition to repeat organic processes. This law of association and habit applies to "organic memory"; thus "associative memory" is fundamental in, and unites, both psychical and physical reactions.

(2) Inhibition. The animal organism has a motor character. All sensations and mental states are motor; the entire neuromuscular organism, mental and motor, acts primarily as a whole, governed by the laws of association, and this is subject to control. The phenomena of nervous life are the outcome of a contest between what we may call inhibitory, and exciting or augmenting forces" (Foster). It is conceivable that all nerve-centers are normally at all times subject to continuous control or inhibition, and are maintained in a condition of mobile equilibrium by the opposition of this inhibition to their own inherent tendency to discharge (Mercier). "Inhibition is an action which obstructs or impedes another action, and which weakens or arrests it if it was already in action" (Oddi). "Voluntary action is at all times the resultant of the compounding of our impulsions with our inhibitions" (James). "The inhibition of a mental process is always the result of the setting in of some other mental process" (McDougall). It may be said as a physiological conception that in living substances there are conditions of cohesion and inertia by virtue of the anabolic tendency of its physical and chemical elements; this may be called *physiological inhibition,* and it is the primary factor in the mobile equilibrium conservatively holding the balance against the tendency to discharge induced by constant external stimulation. The psychological conception of the essential physical fact, is that one neural process inhibits another; it may be said that as a will-impulse implies a neural process, which may inhibit, or excite and augment, some other mental or neural process, this may be called *voluntary inhibition.* The great importance of the study of inhibition, which is only indicated here, lies in its holding an equal and counterbalancing place in mental and physical processes.

(3) Energy of muscle and nerve. This refers to the principle of the storage and discharge of energy, and the biological theory that functional activity of a specialized tissue depends primarily upon chemical changes in its individual cells. The fundamental idea is that in the resting state the cell elaborates highly complex compounds and that these break down to yield the energy by which the cell does its work; discharge and restoration of energy is common to both nervous and muscular elements. Hughlings Jackson characterizes the animal organism as "an appa-

ratus for the storage and expenditure of nerve force." These principles are of essential importance in the study of mental disorders. Inasmuch as functional efficiency must be taken as a measure of the available energy, it should be expected that exhausting influences would reduce functional power. Such reductions characterize all forms of the functional psychoses, and the variations of their symptoms are consistent with this principle.

(4) Physiological use and fatigue,—waste and repair. The law of use includes the wholesome effects of those just cited; normal use develops functional activity and strengthens power, while disuse weakens function. Overuse begets fatigue, and normal fatigue presents mental as well as physical effects. *Physiological fatigue* may be continued beyond the point of regular recovery by rest and nutrition; it then becomes the *pathological fatigue* of nervous exhaustion or neurasthenia with the characteristic symptom-groups. A functional conception of the significance of these groups of mental and physical symptoms should stimulate not only such a precise observation of them as is needed to constitute "disease-forms" and mature types, but should lead to their being analyzed and traced to their functional sources in the whole organism in accordance with the principles of general pathology. This method reveals the genesis in physical states of some of the most characteristic mental manifestations. Beginning with the fundamental attribute of irritability, for example, wide variations occur within normal limits, but more striking and significant changes appear in all forms of pathological fatigue, and the functional phychoses; the irritable weakness and languor of neurasthenia, and the psychomotor excitations, retardations, and "confusions" of melancholia and mania are examples. The study of these alterations of irritability involves the whole problem of reflex-action and the mechanism of responses to stimulation of both mental and physical functions. It is to be recognized also that all of these reactions contribute to the sensory returns from the whole organism,—from the viscera, muscles, and even the special senses including the special dermal sensations, to the central nervous system, constituting the kinæsthetic and organic sensations. In mental physiology a functional conception of these reactions reveals their importance for an understanding of the genesis of emotional changes, and the alterations of the affective

tone in states of persistent mental depression. The sense of well-being and ill-being depends upon these variations. Most important of all, because so completely neglected in psychiatry, are the bluntings and losses of organic sensations and the consequent effects upon the feeling-tone and ideation; in this regard attention should be called, especially, to a remarkable fact well-established in physiology and psychology. It is evident that the normal irritability of nerve and muscle requires the maintenance of a certain chemical constitution; slight variations from this, temporary or continuous, alter or may destroy the irritability. Further, it is noticeable in most cases that the first step toward deterioration is a rise of irritability; the cause being increased or continued, sooner or later exhaustion supervenes, the irritability lessens, and is finally lost.[24] These functional reductions of sensibility, in a wide range of varied degrees and combinations, are constant symptom-factors in psychiatry.

The relation of mental physiology having an essential importance for psychiatry there should be a first reference of all mental symptoms to their functional sources in the organism as far as possible with respect to their correlation and association with alterations of bodily functions. By the genetic method study should begin with the minor changes from normal action; these alterations show intensifications and losses of function, and symptom-groups are modified by their varied combinations.

Mental Physiology and the Functional Psychoses.

The true basis of a pathological physiology in psychiatry is mental physiology and its physical correlations of function; variations of nervous and mental reactions in their initial stages may be wholly functional. Approaching the subject newly from this point of view the physician is assumed to know the modes of reaction of the nervous and mental mechanisms and that part of the work done by the nervous system leads to consciousness; he should know also the primary postulates of psychology. Having to study the operations of other minds, he needs to distinguish, in descriptive terms, his own conscious experiences.

A helpful method in psychiatry is to separate the experiences

[24] Am. Text Book of Physiology, Vol. 2, p. 61.

that relate to the outer world from those that belong to the inner life. Professor Sanford presents this idea in discussing the relation of psychology and physics, to which reference has been made. He describes the conscious experiences that may be called physical phenomena: percepts or series of percepts belonging chiefly to the sense-fields of sight, hearing, and touch, including under the latter the kinæsthetic senses as well as pressure, heat, and cold; he speaks of these as the senses that mediate the "life of relation" with the world outside our own bodies,—the "physical group of senses." Taste, smell, pain, the general and organic senses—all having little external reference—are not mentioned at all in physics, except incidentally. The method of psychology on the other hand, while not essentially different has broader outlines; its phenomena are various conscious experiences, including all those with which physics sets out, but also experiences involving pain, organic and general sensations, feelings, emotions, memories, images, volitions, processes of reasoning—and everything that belongs to such experience. Physics, dealing with outer experiences only, practically works with terms derived exclusively from the kinæsthetic and a part of the dermal and visual experience in its spatial function; these are the senses capable of perceiving matter in motion, and the physicist in using their terms excludes reference to the other senses of the physical group, sight, hearing, and touch. Psychology deals with both inner and outer experiences.

This general view of mental physiology has a special value for psychiatry which it is possible here only to indicate. The conception of a relation between conscious experiences and outer physical phenomena implies an organism, with its special "physical group of senses" in touch with the outer contacts, acting as a medium of transmission between the two; this medium may be conceived as forming also a *somatic* group of senses in the paths of communication. But this mechanism of transmission does not afford even normally, open ways without friction or obstruction; to its reports of contacts with the outer "life of relation" it adds the multitude of returns with all their variations from its own physical workings, and for this process the same mechanism of kinæsthetic and other senses, in a new grouping with others, including the organic and general sensations, is used. In abnormal

as well as normal conditions these returns, however imperfect, stand for the truth and the whole truth in conscious experience; in health we think as little as possible of the medium of transmission, and in all conditions of well-being or ill-being we can only describe our organic feelings in general terms. We do not recognize for the most part the sources of these sensations, yet they have a controlling influence upon our minds. These considerations indicate three groupings of the functions of the sensory mechanisms of conscious experiences: (1) the physical group of senses of the outer "life of relation"; (2) the somatic group of senses of the inner life—our conscious experiences of our own bodies; (3) the central psychical life which includes both of the other groups of conscious experiences besides those belonging distinctly to its mental aspects. The interest of this to psychiatry is that comparatively little attention has been given to this inner sensory field of the sources of conscious experiences; yet, it may be said, here are the conditions and the very material of bodily and mental stimulations and sensations with which the mental work is done. These explaining principles have been almost wholly omitted from the accepted formulæ of the conceptions of modern advanced psychiatry which has chiefly concerned itself with the motor aspects of mental life and expression. These physiological references are needed to explain many of the symptoms of the psychoses and should have their full value in the formulation of the principles of mental physiology and psychiatry.

A functional conception of mental pathology[*] directs observation to the first and smallest departures from normal action, upon the principle that all variations of a pathological character are subject to the laws of normal function acting under abnormal conditions. The study of the development of symptoms is equivalent to noting the genesis and progress of the conflict between the

[*] Cf. Barker, L. F. Methods in Medicine, Boston Med. & Surg. Jour., June, 1905. Referring to the value of a functional conception of pathology, it is also said that "as medicine has become more scientific, the mind has ceased to be satisfied with such descriptive classifications as the clinical symptoms and syndromes represent and with 'clinical types' set up, and is ever on the alert to replace them by classifications of a developmental or genetic character." Quoted from an address before the Mass. Med. Soc. published while this paper was in manuscript.

functional energies and the abnormal conditions. Symptoms are the results in changes of action,—organic effects are the results in changes of structure; by the genetic method the sequences of functional phenomena are noted; in the functional psychoses there are variations of functional efficiency manifested by its reductions and recoveries. The following characterization in outline of the psychoses is an application of the functional principles referred to in the foregoing pages. For the purpose of tracing the several orders of symptom-factors from their genesis in functional sources they can be considered most simply under the divisions of the mental elements—intellect, feeling, and will, as these terms are used in modern psychology for purposes of classification.

1. THE FUNCTIONAL PSYCHOSES.—A study of the large group of cases of non-deteriorating mental disorder yields certain general conclusions as to what may result to the normal well-endowed individual when subjected to the effects of use, disuse, overuse, and stress. Beginning with the least degrees of decline of functional vigor, below normal fatigue, there is no point in the declension where a line can be drawn definitely marking a change from one named "clinical type" to another, down to the lowest degrees of vital energy and complete loss of voluntary function. Throughout all observations of these changes the essential principle of variations of irritability is never to be lost sight of, nor the fact that the first step toward deterioration of function is characterized by a rise of irritability. Another pervading principle is that among the multiple functional mechanisms failure of energy is unequal, and that changes and losses of irritability must apply as much to sensory as to motor function. The word "psychosis" can be used most profitably as correlative with "neurosis," and as including both its proper psychological and pathological meanings leaving the differentiations of sanity and insanity to be indicated by those words. A basis of inquiry, as above described, prepares the way for the examination that comes first in order of the initial departures from mental integrity, viz.: The affections called imperative and fixed ideas, and the primary asthenic conditions of neurasthenia before the after-effects of chronic states have supervened.

Insistent and fixed ideas refer to a wide range of kindred cases of affections that can happen to sound minds in persons neither temporarily nor constitutionally neurasthenic. The functional elements are normal and the affections may attain characteristic forms in normal minds; but this happens to them more readily when there is neurasthenic reduction of inhibitory energy and greater degrees of intensity and persistence occur in association with constitutional instability. All observant sane persons estimate the purposes of others by interpretations of their speech and behavior, and thereto fittingly adapt their own conduct influenced by inferences and judgments in a manner that would indicate "paranoid"

suspicion under certain circumstances. Inasmuch as this is a universal, functional, self-protective principle, sane persons have normally the functional disposition to produce ideas of suspicion and persecution, but well-balanced minds control thought and speech. In *any psychosis,* however, associated with asthenic conditions there may be "paranoid forms" not belonging to that psychosis as essential to the symptom-complex; this reaction is liable to become casually intensified or further developed and fixed by habit. In many cases not "psychasthenic," nor physically neurasthenic, the affection is purely a functional accident; it may involve all forms of emotional reactions, other than "phobias," and many cases recover.

Neurasthenia, in its early conditions, uncomplicatd by the effects of habit, presents the same elements, in mild degrees of functional reduction, that characterize their greatly varied combinations in the symptom-complexes of the graver conditions of melancholia, mania, and exhaustion psychosis or confusional insanity. These neurasthenic conditions may occur in all persons, under sufficient stress, but when there is constitutional weakness the power of resistance is less. The functional elements of the organism, all working together, constitute combinations of community-work of extreme complexity; these elements being unequally reduced in efficiency the "clinical types" are very much varied. A method of analysis of symptoms with the endeavor to estimate their functional values and their relations to their physiological sources will appear under the following topics:

The functional psychoses constituting the main group of non-deteriorating affections pathologically regarded as insanities, all have a basis of some kind or degree of asthenic reduction of functional efficiency; as already indicated, these may include the whole range of degrees from simple cases of nervous exhaustion downward through the simple and pronounced cases of melancholia and mania, including all varieties of phases and combinations of the symptom elements; also including the more actively induced exhaustion psychoses and confusional deliria. Functionally considered, it is proper to regard all these cases as "functional psychoses" until proved to the contrary. Function comes first as the present criterion; organic change is a result. Cases carefully diagnosticated characteristically tend to recovery. The designations, neurasthenia, melancholia, mania, etc., are simply valuable descriptive terms; they are thus not correct names of diseases as clinical types and we have yet to study broadly the genesis and development of these conditions. By the functional method we have merely advanced, as yet, little beyond the general fact that two classifications may be made of the psychoses—the non-deteriorating, and the deteriorating. By the morphological, clinical-type method there is a singular lack of success in adopting principles of valuation of symptoms by which men of good minds can reach like conclusions. We are not yet ready to determine species; this should be aided by the study of the genetic character of the symptom-elements.

The significance of the unifying characters of the non-deteriorating range of psychoses may be made much clearer by grouping them according to the functional sources of the symptoms and their own natures. The symptom-factors thus fall into natural groups, which should be studied with complete freedom from preconceptions of "disease-forms." No more is attempted here than to harmonize these groups with the elementary postulates of psychology, and with the general physiological facts heretofore cited.

(1) *Feeling.*—(The feelings and emotions.) The emotional variations that are pathologically persistent are in close relation with the changes of bodily states which are represented in the central nervous system by the organic, kinæsthetic and general sensations; the sum of these has, physiologically, a strong influence upon mental feeling and therefore in pathological conditions the emotional tone of the psychical sphere corresponds with the sense of personality by "states of mental depression" (melancholia) associated with malaise and ill-being, and "states of mental exaltation" (mania) with sense of well-being and false euphoria. The complex sources of the sense of body have been described and the changes of irritability due to fatigue and other causes; the consequent variations of the sense of physical pleasure and pain are closely connected with the rise and decline of irritability, its intensification and losses, but not with parallel changes.

In the emotional states of "neurasthenia" the depression is variable; of "melancholia," persistent; in both the feeling-tone may be combined in various ways with the first degree of functional deterioration of irritability marked by agitation, restlessness, "irritable weakness" (psycho-motor excitation), or by dulness, slowness, languor (psycho-motor retardation). In nervous exhaustion and melancholia the feeling-tone is constantly influenced by bluntings and losses of organic sensation, strikingly shown in the loss of the sense of fatigue—"fatigue-anæsthesia," and the various unequally distributed conditions described in the natural order of decline as hyperæsthesia, hypoæsthesia, paræsthesia, and anæsthesia; also ease and obstruction of motor expression have their reflex influence upon the affective states as in a feeling of facility, or the "sense of inadequacy" and the "sense of effort."[35] Hopelessness, introspection, retrospection, apprehension, self-reproach, are logical consequences. All these variations are persistent intensifications and differences of the normal connections of ideas and emotions, with their correlated physical reactions; the persistence of morbid emotional reactions indicates deteriorated body states.

In the emotional states of "mania" there is the characteristic exaltation and exhilaration; but in many cases there is depression of feeling of the type shown by anger in its origin from painful states of irritation, and by distressing delusions and aggressiveness. These two prominent types of feeling-tone are associated with corresponding variations of irritability

[35] Cf. Cowles, E. Op. cit. Neurasthenia and its Mental Symptoms, 1891.

marked by its rise from moderate to high degrees of psycho-motor excitation, shown mentally in "flight of ideas," corresponding to the agitation and irritable weaknesses in melancholia,—sometimes more extreme and sometimes reduced and lost. The clinical pictures in some cases may indicate a simple absence of painful irritation, but they certainly show, characteristically, the false euphoria of blunted sensations, as in alcoholic intoxication.

(2) *Intellect.*—(Sensations—perceptions and ideas.) The "thinking process," as it is rather vaguely called, may be definitely conceived to include the ideational reactions of the stream of consciousness, constituted of the association-processes in combination with the inhibitory or exciting control of the will working through attention and apperception; the emotional factor enters into the combination and modifies the "thinking process" with intensifications of interest and motive influences. It is impossible to describe these function-factors separately because they all work together. The character of the ideas—the sensations revived by memory in the association-process, whether depressed in melancholia, or exalted in mania, is in harmony with the emotional tone as it is "lowered" or "exalted." The time element in the processes of the stream of consciousness varies with the rise in irritability and especially with the coincident reduction of inhibition. This, in mania, with the intensification due to irritability, produces "flight of ideas" with quick reactions and superficial associations. The tendency is to increasing weakness, reduction of clearness, incoherence, and final arrest of mental functions in confusion or stupor. With disordered perceptions there are illusions and hallucinations; delusions arise. Maniacal states represent graver degrees of derangement than melancholia, and a lower level of functional reduction, especially of inhibition. The more profound conditions of acute exhaustion (confusional insanity, exhaustion psychoses) occur sharply by themselves from strongly exhausting influences and are varied manifestations of delirium; these may supervene in the severer types of both melancholia and mania.

(3) *Will.*—(Inhibition—attention and apperception.) In the sense that acts of the will are such acts only as cannot be inattentively performed it produces exciting or augmenting effects in the "thinking process," or inhibiting effects; working through attention and apperception its function of control appears in voluntary inhibition, and this has been described in part in connection with the other elementary functions and in the reference to the physiological law of inhibition. Normally inhibition, both physiological and voluntary, stands in mobile equilibrium with the tendency of all conscious and neural excitations to discharge into motor effects, open or concealed within the organism. In the incessant change and succession in the train of ideas in consciousness the attention holds the chosen or attracting idea in the interplay of neural processes and thus inhibits its tendency to pass away, other items being held with it in reasoning, and apperception being a special form of the same controlling influence. This

inhibitory function is a true index of the integrity of vital energy; it is regularly reduced in efficiency with asthenic reduction of the nervous forces. Voluntary inhibition is variably reduced in neurasthenia, persistently in melancholia, and greatly so in mania with loss in delirium.

(4) *Organic Sensations and States.*—(General and kinæsthetic sensations.) The importance has been shown of these function-factors of the "somatic group of senses," in respect to the representations they bring into conscious experiences concerning the inner physical life of the body. In health the sensory and motor reactions of our bodies, and our conscious experiences, are adjusted to contacts with the environment within normal limits; the organic and kinæsthetic senses normally contribute to the general welfare with only salutary interferences, and these being mostly unnoticed we habitually ignore their existence. It is in disordered physical conditions that the abnormal influences arise and interfere with and derange the experiences of the mental life; they are general and vague in character, but are of essential significance though only described as subjective experiences. The phenomena of changes of excitability and loss of function are well-known and variously described; an interference with the functions of any one system will disturb the normal functional equilibrium that must of necessity exist in the action of the whole.[27] The principle of localized variations of irritability, as in the neuroses, applies to all functioning groups of cellular mechanisms; the threshold of excitation may be raised or lowered in any of the sensory, motor, or central and psychical parts of the reflex mechanisms. Upon these changes may be predicated all the phenomena of psycho-sensory and psycho-motor excitation and retardation, conditions that appear in some kind or degree in the whole range of the functional psychoses. These variations may be ascribed to reductions of the nutritional maintenance of the vital energies. Hyperæsthesia and hyperkinesis are the complementary manifestations that betoken fatigue, or equivalent weakness from some cause, of the physiological inhibitory energy; this condition is often associated with anæsthesia of the fatigue-sense in the same case.

It should be noted that the changes of feeling-tone, of motility, and of control do not run parallel to each other; hence the differences of the clinical pictures presented by typical melancholia and mania, and the so-called "mixed cases"; melancholia presents two principal types—emotional depression with excitation and retardation; mania presents emotional exaltation with excitation and sometimes with painful states of consciousness and the acute reductions of function in exhaustion and stupor. There are numerous phases in the unified melancholia and mania as constituting one general group of variations of functional disorders presenting clinical phenomena apparently widely divergent as "clinical types," but falling into harmonious relations when explained consistently with their developmental and genetic character.

[27] Cf. Mott, F. W. The Degeneration of the Neuroses.

2. THE DETERIORATING PSYCHOSES.—These psychoses have an important relation with the *functional psychoses* that should be mentioned here. They are characterized by persistent functional deterioration and tend to dementia; this is consistent with the opposing fact that the vital energies of the life-process sometimes appear to overcome in recovery the interferences with their normal action. It has been said that the functional psychoses tend to recovery; yet the failure to recover in some cases may be consistently referred to constitutional weakness or the loss of vigor in old age. This does not imply that heredity is an essential cause of mental disease; "neuropathic" persons have less endurance against all adverse influences. Among the *deteriorating psychoses* the first place is given to a large group called "dementia præcox"; its general form is not clearly differentiated, nor its special divisions; no common basis is implied in the designations hebephrenia (mental weakness), katatonia (motility disorders), paranoid forms (insistent and imperative conceptions). A single case may change from one "form" to another, and the recognition of some constant characters is required to unify all the "forms"; the common fact of dementia is shown in the deterioration of capacity that may occur in any of the functional mental elements, varied in different cases; this implies structural changes. The character of the failure is revealed in the quiescent states after the subsidence of active symptoms. The most common fact is the deep-seated deterioration of the emotional nature; hence the characteristic indifference and apathy which favors the development of habit automatisms, etc. Concerning this large group of deteriorating psychoses, regarded as above stated, and including also the few other "disease-forms" at present accepted as such, some general conclusions now appear with respect to the functional psychoses.

The unification of the functional psychoses can only be indicated here with respect to the explanations and conclusions reached during some years of teaching the principle that each of the groups conveniently designated neurasthenia, melancholia, mania, etc., simply includes variations in combinations of different degrees of functional disorder of the same physical and mental elements. The essential unity of melancholia and mania was recognized by Griesinger and others with differing explanations; modern physiology and psychology broaden and simplify the whole subject with better explanations of general principles.

In recent psychiatry there is an evident tendency to the unification of the psychoses.

A significant contribution has been made by Dana;* in his

* Dana, C. L. The Partial Passing of Neurasthenia, Boston Med. and Surg. Jour., Vol. CL, 1904.

large neurological experience he has seen much to favor the idea that most neurasthenias are mental cases, or non-insane psychoses; the term phrenasthenia is used for a special group of neurasthenic or degenerative psychoses including mainly those described by Janet as psychasthenia; it is said that an innate constitutional weakness underlies all the chief non-accidental functional insanities. There is much reason for a simplifying psychiatrical conception, complementary to Dana's view, that not only most, but all functional mental cases are subjects of asthenic reduction of functional efficiency and are neurasthenic. The tendency is notable in the remarkable studies of Janet in which he reaches the conclusion by psychological analysis that many of the apparently diverse psychoneuroses may be unified under the one principle of psychasthenia; this implies a general and special insufficiency in all the phenomena and is at the same time neurasthenia; these affections represent regular degrees of lowering of functional efficiency.

The genetic method leads to a comprehensive view of all the psychoneuroses. Considered biologically and physiologically neurasthenia, phrenasthenia, psychasthenia and all the functional psychoses are modifications of functional characters. Whether these modifications were acquired newly by the individual himself, or by his ancestor and thereafter transmitted as though they were inherent variations, the problem is essentially the same. However perverted, distorted and anomalous the functional phenomena of vital activity may be, they must be traced back to the first interferences with the physiological elements to find their explanations in their genesis. We may assume that all normal adult individuals are subject to certain acquirable functional modifications—numerous and complex, thus forming the symptom-groups called neurasthenia, melancholia and mania, for example; all abnormal persons are subject not only to the same changes, but to something more and something different, and these additions may be simply special variations of intensity, or degrees of impairment, or of differences pointing to other than functional explanations. A general principle in mental pathology may be derived from these considerations. Whatever the form of a deteriorating psychosis it has its own pathological characters; but superimposed upon these symptom-factors, and relatively superficial, neurasthenic manifestations commonly appear, and there may be epi-

sodes more or less transitory, of manifestations of the functional psychoses. This occurs notably in the early stages of dementia præcox and manifests the practical concurrence of two diseases, viz.: the permanent deteriorating psychosis and the transitory phases (melancholic, maniacal, and paranoid) of the functional psychosis. This principle accounts also for the fact of there being maniacal as well as melancholic types, and the "paranoid conditions," in the "involution psychoses"; this principle is already well recognized in respect to the neurasthenic melancholic, and maniacal modes of onset of paresis; and to the same types of functional disorder, and tendency to obsessing suspicious and delusional ideas, in senile insanity in which active symptoms may measurably or wholly disappear. All the psychoses called functional for purposes of classification, and being nearest to normal, constitute the main division of the psychoses (considered as mental disorders); all the psychoses called deteriorating and being exceptions to the others, constitute the minor division. In these the fact that in some particulars the reductions of functional efficiency remain permanently deteriorating constitutes dementia, which implies some form of structural change, though none strictly characteristic has yet been found. The pathological principle here suggested leads to a practical method of analysis of the symptom-factors of all possible forms of deteriorating psychoses. The first step is the distinction of the purely functional modifications referable to physiological sources; these relate to variations of the fundamental irritability as explanatory of changes of motility and of the sensibilities and emotional tone, all being comprehended broadly in relation with the "somatic group of senses;" closely kindred with these are the reductions of function of the processes of association, memory, attention, inhibition, etc. Holding apart these phenomena of the main division of psychoses as being included in the functional conception of their pathology, and as explainable through their genetic and developmental character, there remain, of the symptom-factors of a deteriorating psychosis, those that point to the causes of the special deterioration. This helps to define the problem of research for anatomical explanations. It should not escape observation that when there is "innate constitutional weakness" in cases belonging to the main group of functional psychoses, special modifications may be noted

in the symptom-factors, especially of the attention and inhibition element whose reduction is the most constant and characteristic fact of constitutional insufficiency. It is in these conditions that the law of habit has its most potent and perpetuating influence.

The functional psychoses, including those answering to the definition of "a typical form of insanity," present some points of special interest when analyzed in accordance with the method and principles examined in the foregoing pages. Reference has been made to Griesinger's descriptive definitions of melancholia as "states of mental depression" and mania as "states of mental exaltation." During more than half a century these designations have held their places in psychiatry; the search for more satisfactory statements has not been altogether successful. The difference of the emotional tone is the criterion but it is not a wholly true one. The depression in melancholia is consistent because the "somatic senses" retain enough of normal function to report truly to consciousness the fact of ill-being of the body; but in mania the exaltation is not constant, the physical correlatives of the feeling-tone are more disordered by reductions and losses yielding more irritating excitations and in many cases a fictitious sense of well-being. But the "somatic senses" produce other equally important symptom-factors in the changes of motility; in melancholia with impaired inhibition there are both psycho-sensory and motor excitations and retardations,—in mania, with graver changes and losses of inhibition, motility is more disordered. The word melancholia, by long usage and observation of the facts, really stands correctly in the recognition of its meaning all of its well-known symptom-factors other than emotional depression; the word mania meaning madness, stands equally well for both its emotional variations and its motor excitement. In mania there is graver derangement of the "thinking process" and its "states" are at a lower level of reduction than melancholia. These references though meagre serve to show that the terms melancholia and mania are well understood as including a great variety of states of varied combinations and proportions of their symptom-factors; besides the many typical cases of each group there are found to be very many "mixed cases." There are many phases, and a two-phase conception to represent the original groups of "states" does not hold good; for example, taking out the emotional de-

pression from one group, and the motor excitation from the other, in order to designate the distinction of the phases and to characterize the compound "disease-form," leads to the exclusion from it of the very essential psycho-motor excitation often associated with the depression in the former group, and to overlooking the significance of the emotional changes in the latter. An adequate study of the "somatic group of senses," as suggested here should help to clarify the whole matter. Compound designations for the unified symptom groups yet suggested do not satisfy the requirements so well as their simple combination in "melancholia—mania." The psychoses cannot be limited to the insanities; we must speak of the "non-insane psychoses," and in psychology the word refers to normal function. It might be said that the first step in the classification of mental diseases discovers two great divisions: *functional insanity* and *deteriorating insanity*.

This discussion of the thesis that the problem of psychiatry is in the functional psychoses, required first an examination of the terms and conditions of the problem. This necessitated an inquiry concerning certain principles and conclusions of the biological and medical sciences that have had a controlling influence in psychiatry. Morphological conceptions being dominant in medicine, it was found also that a number of terms and phrases are so commonly employed in medicine that their use has been compelled in psychiatry, although they embody conceptions and theories inconsistent with its dependence upon functional conceptions of mental pathology. The inquiry having led to the conclusion that the physiology of the life-process is the first recourse for psychiatry in the search for explaining principles it becomes necessary to be emancipated from all preconceptions. The functional conceptions, being framed, and applied consistently with the facts of physiology and psychology, lead to a recognition of the developmental and genetic character of the functional modifications, and indicate their sources in physiological facts. A clearer idea is gained of the relation of conscious experiences to body states, and of the influence of the "somatic group senses" in the relations of the conditions of the whole organism to the mental states. The dependence of all functional phenomena upon the processes of nutrition and metabolism for the maintenance of the nervous and mental mechanisms, points to the

fundamental importance of pathological physiology and chemistry. Physiological and psychological experiment in the immediate clinical examination of functional modifications shown in symptoms helps to determine the physiological sources of the contributing disorders in the whole body as well as the central nervous system.

The psychiatrist inclined to inquiry finds, in the pursuance of his practical work, that as a physician he must treat the whole body, and that a functional conception of mental diseases leads to treatment. Psychiatry belongs to general medicine and mental disease like bodily disease is not an entity nor an agency but the result of normal function acting under abnormal conditions; the problem requires the investigation of the developmental and genetic character of functional modifications.

THE EFFECTS OF EXERCISE UPON THE RETARDATION IN CONDITIONS OF DEPRESSION.

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The present paper deals with a small part of a research upon the physiological and psychological conditions in cases of retardation.[1] An attempt has been made to determine how much, if any, betterment this class of patients undergoes with exercise, both active and passive. The condition of retardation, and of the "feeling of inadequacy," which is very closely allied to retardation, we believe is one of lowered irritability, and any method that will help to bring the general irritability back to a more normal condition will be of benefit to such patients. Two clinical observations point strongly to the stimulating effect of exercise in this class of the insane, but such evidence has probably not been given sufficient value. The more noticeable of the two facts is that improvement in the mental condition of this class of patients is first noticed in the afternoon. After the activity of the morning the irritability seems to be increased to such an extent that the patient moves and answers more quickly and feels more nearly normal. The same stimulus seems to have a much greater effect in the afternoon than in the morning. The second fact is that after a restless night the retardation is often less marked and a condition is noticeable similar to the afternoon improvement. The loss of sleep, or, it may be, the restlessness of the night tends to "key up" the patient and the reactions are not so slow. In addition it may be mentioned that Hoch[2] has found that the "warming-up" effect in a case with the "feeling of inadequacy" is much greater than normal. On the separate days he found an

[1] The part here published is complete in itself but is now given mainly because of its suggestiveness and because it may help to emphasize the fruitfulness and importance of the application of psychological and physiological methods in psychiatry.

[2] On certain studies with the ergograph. Journal of Nervous and Mental Diseases, (1901), XXVIII, 620-628.

"unusual rise of pull number from curve to curve."[3] The lack of practice effect in Hoch's case and his conclusions will be considered later.

Two series of experiments have been made. The first series was with only one patient. In this series careful tests were made of his pressure and pain sensibility, of the rapidity and accuracy of movement, and the speed of reading. These experiments were made on days when he pursued his normal routine and on days when he had been subjected for five minutes to mechanical vibration along the extent of the spine. The second series was made with two retarded patients. The tests of this series included experiments upon simple and choice reaction times, upon the rapidity of movement, and upon the time of the more complex processes of reading and discrimination. These tests were made in the early morning at 8.30 or 9.00 and again two and a half hours later at 11.00 or 11.30. On alternate mornings exercise or rest was taken by the patient. On the resting days the subject was kept very quiet, lying down if possible, so that no extra muscular work was done, and on the exercised days for two hours between the two series of experiments the patient was taken for a long walk or on one day the patient was permitted to bowl during the interval.

The subjects for the experiment were two men: S., a merchant, is 44 years old. This is his third attack of depression. His first attack was at 20, and lasted five months. His second attack was at 33 and continued five months. The present attack began in March and now is practically over; duration six months. On entrance the patient was greatly retarded. He explained that he felt weak and could not put his mind on things. He would not answer questions, reacted little to pin pricks, and when asked to show his tongue made several unsuccessful attempts to do so. The other subject, Ev., has been depressed and retarded for nearly two years. This is his seventh attack of depression.[4]

[3] In a brief report of the continuation of this work Hoch reports similar results in more pronounced conditions of retardation in melancholia. Psychol. Bulletin, (1904), I, 255.

[4] This patient was used in a previous part of the research, and some of his results have already been published. Franz: Anomalous reaction times in a case of manic-depressive depression. Psychological Bulletin, 1905, II, 225-232.

SERIES I.—In the first series of experiments S. alone was used, and an effort was made to determine what effects followed the passive exercise and stimulation given by a mechanical vibrator. The subject was vibrated on alternate week days at 9 a. m. with a mechanical vibrator consisting of a vertical rod to which was attached a hard rubber ball 1¾ inches in diameter. This was pressed lightly against the skin over the points of exit of the nerve trunks, both to right and to left along the extent of the spine. Each point was vibrated five seconds.

On the days when the patient was not vibrated the tests were made at 9. a. m., and on the vibrated days the tests followed immediately the mechanical vibration. The first experiments made each day were the determinations of the touch and pain thresh-

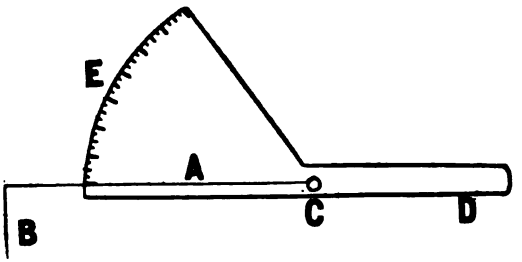


FIG. I.—The figure is about ¼ size of instrument.

olds. Then followed an experiment on the rapidity of movement, then the test on the accuracy of movement, next a test of the speed of reading, and finally a second test on the rapidity of movement.

Pressure sense threshold.—The touch threshold was determined by means of an instrument similar to that used by Bloch. The accompanying illustration will give an idea of the apparatus. To a piece of wood was attached a spring steel wire *A* which was bent at a right angle *B*. The long part of this wire, *A*, measured six inches. The area of cross-section of the wire was about .4 sq. mm. A scale *E* attached to the instrument permitted the experimenter to determine the threshold. The instrument measured pressures as high as 1¼ gms. The right-angled piece of the wire was pressed against the patient's skin, care being taken to keep it vertical all the time, and when the subject reported that the

pressure was perceived, the reading was taken from the scale and recorded. The following points on the skin were selected for the determination of the touch threshold: On the back 3 in. external to and level with the spinous processes of the 12th dorsal, of the 2d and the 4th lumbar vertebræ, and of the 4th sacral segment on either side, making in all 8 points. On the palm of each hand 19 points were selected as follows: the tips of the thumb and fingers, points midway between each of the phalangeal joints, and directly over each of the metacarpo-phalangeal joints. Care was taken not to select any calloused spots. Two determinations of the threshold were made on each of these points each day. A sufficient interval was permitted to elapse between the two tests to avoid any possible summation effect of the stimuli. Throughout these, as well as throughout all the other experiments, the patient co-operated very well. There was no indifference or unwillingness on his part during the progress of the series except on July 14th; the results on this day will be considered later. All the experiments on the back or on the palms for one day are grouped and averaged. The figures in the following tables are, therefore, to be understood as the daily averages of 76 experiments on the palms or of 16 experiments on the back.

Pain threshold.—The determination of the pain thresholds were made with an instrument similar to the well-known Cattell algometer, but the area of stimulation was approximately 2.5 sq. mm. The measurements of pain threshold were made on the same points used for the determination of the pressure threshold. The experiments on pain, however, were made after the touch experiments, and only one determination was made each day. The total number of observations each day was 38 on the palms of the hands, and 8 on the back. As in the case of the pressure threshold, all the measurements for the hands were grouped and averaged for each day, and a similar procedure was followed for the 8 daily pain determinations on the back.

Rapidity of movement.—The rapidity of movement was rather roughly tested by having the subject tap on a sheet of paper 8 by 10 inches with a pencil for 30 seconds. The subject was instructed to tap with the pencil as rapidly as possible from the time the signal for starting was given until told to stop. The total number of taps made in 30 seconds was counted and there-

from we calculated the average time for making one tap. The figures in the tables refer to this average time. Two experiments were made each day, and both of the averages are given in the accompanying tables.

The accuracy of movement.—A sheet of paper 8 by 10 inches was put before the subject and he was instructed to draw thereon a line. This line was then covered up and he was told to reproduce it. This was kept up until he had made 20 reproductions, each line being intended equal to the preceding one which he had drawn. The interval between drawing the lines was about 3 seconds. The length of line varied each day, but tended to be approximately 110 mm. long. The constant error in the reproduction of the lines was determined, *i. e.*, what tendency the patient had towards making his reproductions longer or shorter than the line which he was to reproduce. The average error was also calculated by taking the differences between the consecutive lines and averaging these, but disregarding any special tendency towards an increase or a decrease in his reproduction. Both the average constant error and the average error are, therefore, averages of twenty experiments each day.

Speed of reading.—During the last thirteen days of the series one experiment was made each day on the rapidity of reading 100 figures. The time given in the tables for these experiments is the total time for the 100 figures.

In the accompanying table will be found the results of all the experiments of this series for twenty-six days.[8] It will be noted that in the course of the experiments there was a gradual and steady improvement in the rapidity of movement, in the speed of reading, in the threshold for pressure, both on the palms and back, and for the pain threshold in both regions.

Contrary to the observations which have been made by other people, it will be noticed that the touch threshold in this patient

[8] On September 23, after the MSS. was sent to the JOURNAL, other experiments were made with S. Two experiments on tapping gave average times of .185 and .171 sec. respectively. Touch threshold for palms was .021 and for back .065 gms. Pain threshold for palms 440 and for back 456 gms. All these figures show a decided improvement in the patient. The day these experiments were made the patient was discharged "recovered." These results, therefore, may be considered *normal* for S.

TABLE I.

DAILY RESULTS AND AVERAGES. SUBJECT, S.

Dates.	Tapping time in sec.	Reading 100 figures sec.	Accuracy of Movement in mm.		Pressure Threshold in grams.		Pain Threshold in grams.	
			Constant Error.	Average Error.	Palms.	Back.	Palms.	Back.
July 6	.263		+0.95	3.75				
7*	.227		+1.2	2.95	.190		909	
8	.231 .252		+0.6	5.93	.257		931	
10*	.205 .210		+0.38	7.40	.185	.181	922	822
11	.217 .216		−0.67	3.10	.231	.657	998	1020
12*	.203 .204		+1.7	5.35	.277	.395	984	988
1	.216 .231		+0.5	4.55	.233	.352	978	921
14*[1]	.256 .248		+0.7	4.50	.334	.800	1012	1020
15	.226 .208		+1.2	4.13	.217	.274	965	1020
17*	.221 .207		+0.95	3.35	.147	.285	986	1010
18[2]	.205 .217		+0.55	4.80	.096	.151	802	886
19*	.197 .194		+0.5	5.68	.116	.276	811	855
20	.196 .208	45	+1.0	6.70	.137	.246	900	947
21*	.203 .199	43	+1.18	5.28	.118	.311	812	883
Aug. 8	.221 .207	42	+0.1	3.5	.088	.151	696	702
9*	.195 .194	40	+1.0	5.2	.085	.114	652	651
10[3]	.205 .194	42	+0.78	4.1	.060	.218	596	593
11*	.196 .192	41	+0.03	4.5	.075	.178	609	740
12	.195 .208	36	+0.4	4.5	.046	.155	588	644
14*	.192 .186	36	+0.25	4.7	.056	.125	636	676
15	.199 .190	35	+0.8	5.7	.078	.169	670	627
16*	.183 .182	35	+1.1	5.0	.064	.088	680	634
17	.200 .188	35	+1.15	5.0	.068	.105	631	600
18*	.183 .192	35	+0.85	6.3	.056	.137	602	577
19	.192 .211	36	+0.4	6.5	.043	.114	618	574
30	.192 .194[4]				.039	.098	552	555

* The dates which are starred are days on which the patient was vibrated.

[1] Patient was very sleepy during the course of the experiments and did not answer well.

[2] Experiments made in the afternoon.

[3] The patient had very little sleep during the previous night.

[4] These experiments were made August 26 after extra practice of two similar experiments each day for one week. See Table III.

at the beginning of the series, as compared with what it was found to be at the end, is very high and the pressure sense seems to be considerably dulled.[6] It is true that during the progress of the experiments the patient was gradually getting better, but precautions were taken at all times to determine whether or not the high determinations which were made were due to a dulling of the sensibility or to his slowness in responding. Often during the course of the experiments on any day a number of *Fehler Versuche* were made by holding the instrument either above the skin so that no touch was given or by pressing it down to a point where it seemed likely the stimulus would not be perceived and keeping it there for a few seconds. Both of these methods gave usually negative results. Occasionally there was what might be termed a premature reaction, *i. e.,* a response when he was not being stimulated, but with the other method response was not obtained until the pressure had been increased. It is, however, interesting to note that there is a decided improvement in the pressure sense. Whether or not this be due to an actual improvement in the pressure sense itself or be due to a lessening of the retardation cannot be definitely decided. We believe that the improvement is an actual sensory improvement (using in our present state of ignorance the term sensory to include the whole sensory apparatus, end organ to the brain). The results obtained when the second precautionary method was used indicate this, it seems to us, very clearly. Furthermore, we shall see in a comparison of the results on the vibrated and non-vibrated days (Table II) that on the vibrated days the improvement is much more marked. This would indicate that the extra stimulation which was given to the back and which probably had its effect

[6] Using a similar instrument and method, Griffing (On sensations from pressure and impact. Psychological Review Monograph Supplement, 1895, I, 1, p. 88.) found on two normal subjects an average pressure threshold of 2.3 gms. over an area of .9 sq. cm. If the pressure necessary to be perceived varies directly with the area of stimulation, we should expect a pressure of .012 gms. to be perceived when the area of the stimulating instrument is .4 sq. mm. It should be mentioned that other investigators found relatively higher thresholds than did Griffing, and still others found much lower. See table in Sherrington's article on Cutaneous Sensations in Schäfer's Text Book of Physiology, Vol. II, p. 927, and table in Landois' Physiology (trans. by Brubaker), 1904, p. 928.

upon the spinal cord helped to increase the irritability of some part of the nervous mechanism.

Similar results are found for pain threshold. Usually the statement is made that the pain appreciation in this class of patients is not diminished. This conclusion, however, has been drawn entirely from a few rough clinical tests such as pricking with a pin, although often it is admitted that these patients react very little to pin pricks. We have been unable to find any accurate determinations of the pain threshold in this class of patients to substantiate the general opinion. A reference to the table will show that the threshold at the beginning of the experiment was over 50 per cent higher than it was at the end of the series, and, moreover, it is particularly noticeable that the results of the first two weeks, July 10 to 21, are very much higher than the results obtained from August 8 to 19 after the patient had had a period of two weeks without experiments. If the lowered threshold was due to practice we should expect that a part of the practice effect would have disappeared during the two weeks' interval.

Similar precautions were taken in these experiments as were done in the touch threshold series, but even when the instrument was kept at a point of considerable pressure, the subject did not respond, although sufficient time was given for a retarded answer.[1]

The experiments on the accuracy of movement show practically nothing. The results are included here for their negative value, because they indicate that there is no disturbance of the "movement" sensations. There is no constant increase or de-

[1] This would indicate that at such times the threshold was even higher than we had determined since Griffing found that the pain threshold was a function of the time of stimulation as well as of the area and intensity. Op. cit., p. 80-83. Griffing found in 40 persons an average of 5100 grams for pain threshold when the area was 0.9 sq. cm. The results at the beginning of S's series are, therefore, much higher than the normal average and those at the end of the series, while they approach this average, are somewhat higher. It should be further noted that Griffing found (Op. cit., p. 53, note) that in some pain measurements "a number of experiments had been made on the hand before, and it seemed to have become less sensitive by about 2 K. than when it was first tested." This conclusion would indicate that any "practice effect" for pain threshold would be towards an increase rather than a decrease of the threshold.

crease in the average error from the first to the last of the series, nor does the constant error show any special tendency. If there was any disturbance of motor sensation it should show itself in an increase of the average error, but throughout the series the proportion of the daily average error to the total length of lines which were drawn is no greater than normal.

There is an increase in rapidity in tapping time from the first to the last weeks of the series, coincident with the gradual recovery of the patient. Part of this increase in speed must be considered as due to a practice effect, particularly during the first few days, July 6, 7, and 8. For reading 100 figures there is a considerable decrease in time, but here also some of the increased rapidity is undoubtedly due to practice.

In Table I notes have been made that the results obtained on July 14 and 18, and on August 10, are not strictly comparable with the results on the preceding and succeeding days. On July 14 the patient did not co-operate well. He seemed very sleepy, often indifferent, and sometimes unwilling to have the experiments made. Several times on that day the subject said that he felt the touch stimulus some time before he responded. In comparison with July 13 and 15, the results of this day show striking deviations in almost every kind of experiment.

Unfortunately, it was impossible to make the usual experiments on the morning of July 18, and the patient was tested late in the afternoon. So far as a general comparison is concerned the results cannot be used with any of the morning experiments, but they give a more exact measure to the commonly observed condition of afternoon improvement.

The effect of a restless night is indicated in the results of August 10. The averages, except for touch threshold on the hands and the pain threshold of both hands and back, do not indicate the great difference in the patient's feeling of well or ill-being. During the previous night the subject had slept very little, and in the morning became quite voluble, easy in manner, active, although subjectively he felt rather depressed. The condition of the subject or of the experimental conditions of these three days, we judge, are not sufficiently similar to warrant their grouping and averaging with the results on other days. In the

succeeding comparison of the daily results, therefore, these three days have been disregarded.

The patient, it has been mentioned, was vibrated on alternate days. The results both for the vibrated days and those for the non-vibrated days are given in Table I, but we have combined the results to determine any effect succeeding the mechanical stimulation.

The average time of tapping on the non-vibrated days (omitting July 18 and August 10) is found to be .212 sec. Should the first day be discarded also because of the patient's unfamiliarity with the methods, etc., the average is .211 sec. On the vibrated days (omitting July 14) the tapping time averages .199 sec.

The average results for the time of reading on the vibrated and non-vibrated days do not show any difference in time if the result of August 10 is omitted. The time measurements were made, however, roughly with the second hand of an ordinary watch and the error of recording from such an instrument is probably much greater than any time differences in the process of reading. A more accurate method might indicate some differences, but at present we can report only negative results.

In the experiments upon the accuracy of movement it has been mentioned above, no improvement was noted throughout the series. The comparison of the results on the days when the subject was vibrated with those on the non-vibrated days (omitting, of course, results of July 14 and 18 and August 10) give, respectively, average errors of 5.02 mm. and 4.79 mm. and constant errors of +0.83 mm. and +0.58 mm. The average relative amounts of the average errors compared to the total lengths of line were equal on the vibrated and non-vibrated days. It is interesting to note that the constant error averages greater on the vibrated days, there is a greater tendency to make each line somewhat longer than the preceding one. In experiments on normal subjects it has been found that when an individual is feeling particularly well, and there is a general feeling of *bien aise*, there is a tendency to a greater movement, and, as Münsterberg has shown, of an extensor type. On the days when the subject did not feel so well there was less tendency to overestimate movement and, in fact, a tendency towards a movement of a flexor type.

How much this factor is present in S.'s results we cannot say. It would be interesting to repeat these experiments if the patient should become "set up" or even maniacal. The results at present do not indicate any special change in one direction or other. It has been noted, however, that at no time during the series could the results be interpreted to indicate a lowering or a defect of the "motor" sensibility.

In Table II we find much more than an indication of the stimulating effect of the mechanical vibration. Both the touch and the pain threshold are lowered on the palms and on the back on

TABLE II.

AVERAGES OF PRESSURE AND PAIN THRESHOLDS DETERMINATIONS. SUBJECT S.

Results of experiments on July 14 and 18 and August 10 have been omitted. The numbers of days are given in parentheses. 76 pressure and 38 pain determinations on the hands, and 16 pressure and 8 pain determinations on the back each day.

	Pressure Threshold in grams.		Pain Threshold in grams.	
	Palms.	Back.	Palms.	Back.
Vibrated Days	.1245 (11)	.209 (10)	782.1 (11)	788.6 (10)
Non-Vibrated Days	.1898 (10)	.247 (9)	797.5 (10)	783.9 (9)

the vibrated days in comparison with the results on the non-vibrated days. For the touch threshold the improvement on the palms is over ten per cent and on the back over fifteen per cent. The improvement in the pain threshold is not so marked either on palms or back, and for the back the difference is too slight to be significant.

Taking the results of all the tests it is quite evident that the vibratory exercise has caused some change in the body, so that on these days the patient moved more quickly and his touch and pain feelings were not so dulled. The effect of the vibration is very largely stimulating to the tissues in the immediate neighborhood of the area vibrated and probably it has also considerable effect upon the structures adjacent. In this case it is probable

that the spinal cord and the spinal nerves were affected, and this would very naturally increase the irritability of these parts. With an increased irritability of the nerve elements we would get a decrease in the stimulation thresholds.

SERIES II.—In the second series of experiments both S. and Ev. were used. On S. the tests were made each day for a week, and on Ev. for four days. The experiments included (*a*) time of simple and choice reactions, (*b*) the rapidity of movement, (*c*) the time of reading, (*d*) the time of discrimination and movement.

Reaction times.—In these experiments the time for moving a finger of the right hand when a sound was heard gave the time for the simple reactions. For the choice reactions, the same finger reacted to the same sound, and a finger of the left hand to another, but lower, sound. The choice reaction times for the right hand have been the only ones considered, since they are strictly comparable to the simple reaction times. The time was measured by a Hipp chronoscope, and the results which are reported are given in thousandths of a second. With one exception (noted in the table), twenty-five of each kind of reaction were taken at each sitting. The figures in the tables are thousandths of a second.

Rapidity of movement.—The simple reaction time gives us data for the rapidity of movement, but in addition two other tests were made each day. One of these was the tapping experiment described in the previous series (p. 242). The other was the time for distributing some cards. In this test the subject was given a pack of 100 colored cards, each three inches square, which he was instructed to place in a stack, one at a time, at his maximum speed. The calculation of the tapping records was done in the same manner as for Series I. The total time for the distribution of the 100 cards are given in Tables III and IV. The average time for handling and stacking one card can easily be calculated by dividing the total time by 100.

Time of reading.—Pages of an unfamiliar book were given to the subjects with instructions to read as rapidly as possible, disregarding the sense, but reading every word. The matter selected was as free as possible from all difficult words, and persons of ordinary education could read everything understandingly, if it were required. The total time for reading such a page divided

by the number of words gave us the average time for reading one word. The figures in the tables refer to this result.

Time of discrimination and movement.—Here also two different kinds of experiments were made. The first of these was the distribution and discrimination of 100 colored cards. Ten cards, each of a different color, were arranged in a semicircle upon the table and the subject was given the well-shuffled pack of 100 cards,

TABLE III.

THE TIME OF CERTAIN MENTAL PROCESSES, AS INFLUENCED BY MUSCULAR EXERCISE. SUBJECT, S.

Exercise was taken on August 21, 23 and 25.

Day and Time.		Average simple reaction time. 25 experiments each session.	Average choice reaction time. 25 experiments each session.	Average tapping time. One tap.	Distributing 100 cards. One stack.	Discriminating and distributing 100 cards. Ten stacks.	Time for reading one word.	Marking 100 e's. Total time.	Marking 100 e's. Number of e's omitted.
				sec.	sec.	sec.	sec.	sec.	
A. 21, exerc.	8.30	325.6 (20)	450.9 (10)	.203	82	155	.372	170	15
	11.00	269.3	287.4	.176	56	146	.344	136	13
A. 22, rest.	8.30	220.6	274.3	.188	71	159	.358	143	10
	11.00	210.7	270.6	.191	57	135	.351	152	16
A. 23, exerc.	8.30	230.0	277.6	.196	67	140	.358	148	9
	11.00	220.7	256.7	.203	63	129	.341	162	13
A. 24, rest.	8.30	224.1	278.3	.176	64	135	.335	150	
	11.00	182.3	248.9	.182	67	121	.335	166	
A. 25, exerc.	8.30	198.1	232.6	.190	75	141	.348	158	6
	11.00	221.2	214.2	.195	68	128	.342	159	11
A. 26, rest.	8.30	218.4	237.3	.192	79	119	.340	136	10
	11.00	187.4	235.3	.194	80	118	.349	152	4

consisting of ten cards of each color represented on the table. He was told to distribute the cards according to the color as rapidly as possible. By subtracting the time necessary for placing the 100 cards in one stack we obtain the time necessary for discrimination and for association of the color with a certain position on the table. The second experiment of this general character was the determination of the time necessary to cross out 100 small *e*'s in a solid paragraph of printed matter. About a third of a

page was given to the subject with instructions to mark all the *e*'s as rapidly as possible. There were about 900 other letters in the paragraph. Each *e* missed by the subject was counted as an error in calculating the results.

The results of these experiments on S. are given in Table III and those on Ev. in Table IV.

It is evident that there is a gradual but not a regular day-to-day improvement in the result of S.'s experiments, just as was

TABLE IV.

TIME OF CERTAIN MENTAL PROCESSES, AS INFLUENCED BY MUSCULAR EXERCISE. SUBJECT EV.

Exercise was taken August 22 and 24.

Day and Time.		Average simple reaction. 25 experiments each session.	Average choice reaction. 25 experiments each session.	Average tapping time. One tap.	Distributing 100 cards. One pile.	Discriminating and distributing 100 cards. Ten piles.	Time for reading one word.	Marking 100 e's.	
								Total time.	Number of e's omitted.
		sec.	sec.	sec.	sec.	sec.	sec.	sec.	
A. 21, rest.	9.00	292.2	378.8	.219	143	322	.361	164	10
	11.30	246.4	401.3	.233	161	394	.350	182	27
A. 22, exerc.	9.00	273.7	335.0	.240	118	339	.363	187	4
	11.30	236.5	367.8	.250	124	320	.362	177	22
A. 23, rest.	9.00	246.4	369.8	.248	188	349	.388	210	9
	11.30	253.9	403.7	.246	171	317	.349	175	14
A. 24, exerc.	9.00	264.4	353.4	.242	182	325	.375	171	16
	11.30	293.8	405.6	.288	130	339	.365	168	21

noted in Series I. When the results are grouped according to the effects of periods of exercise and of rest, some interesting facts are found. For S. there is a greater absolute lessening of the time for most of the experiments after the two hours' exercise, and with the exception of the simple reaction-time and of the time of discrimination and distribution of 100 cards there is a greater relative improvement.

The relative amounts of the average time necessary for the different experiments after the periods of exercise and rest as com-

pared with the average time before the exercise and rest are respectively as follows:

Simple reaction time	94.4%	and	87.6%
Choice reaction time	78.9%	"	95.9%
Tapping time	97.4%	"	102.0%
Distributing 100 cards	83.4%	"	95.2%
Discriminating and distributing 100 cards	92.4%	"	90.6%
Reading one word	88.9%	"	100.2%
Discriminating and marking 100 *e's*	96.0%	"	109.6%

After the exercise the subject reported much less depression of feeling although he said he was quite tired. Clinically, it was observed that his movements were much more free, and that he talked more easily and without any hesitancy. He took considerable interest and made many inquiries regarding the experiments. On the resting days this "freedom" was not so noticeable.

The anomalous reaction-times which were reported[1] in some earlier experiments on Ev. have also been found on August 25 with S. This would indicate that the condition which has previously been described at some length is more or less characteristic in this class of patients under certain conditions, as yet unknown.

After the exercise taken by Ev. on August 22 and 24, the patient complained that he was greatly fatigued, and not feeling so well as he had earlier in the morning. The comparison of results on the "resting" and "walking" days shows that there is less improvement when exercise was taken. Ev., it will be remembered, is 67 years old, and for two years has been very quiet, moving about little, and being in rather poor "condition" (to use the language of athletics). For such an elderly man the amount of exercise given him was sufficient to bring about a state of fatigue and to introduce the fatigue effect into the results after this exercise.

Various experiments have shown that exercise in moderate amounts is followed by an increase in efficiency and rapidity of mental work, and that fatiguing bodily work is succeeded by a decrease in quantity, quality, and rapidity of mental processes.

[1] Franz: Op. cit.

The two hours' exercise was sufficiently stimulating to S. who, previous to the experiments, had been accustomed to walk for a considerable distance each day, but the same amount of bodily work was fatiguing to Ev. For a period of two years, Ev. had not taken so much exercise in a week or more as he did on each of the exercise days of the experiment.

At present we are able to conclude from the foregoing results, although they are few in number, that moderate active exercises have a beneficial effect in the condition of retardation. Hoch's conclusion[9] that the practice effect is not carried over to the next day does not apply to the kinds of experiments which we have carried on. A glance at Tables III and IV of this article will show a gradual day-to-day increase in rapidity, and the earlier experiments on the reaction-times of Ev.[10] show a similar improvement. We cannot agree, therefore, with Hoch in considering the retardation largely a difficulty in initiating a movement.

SUMMARY.—The results of these studies may be summed up as follows:

1. The thresholds of pain and pressure appreciation are higher than normal in a case of retardation.

2. There is a daily improvement in the pressure and pain sensibility coincident with the lessening of the retardation and the depression.

3. The accuracy of movement is not affected by depression and retardation.

4. The speed of movement is lessened in the retarded condition, but it is gradually increased during the period of recovery.

5. Mechanical vibration increases the rapidity of movement, and lowers the pain and the pressure thresholds.

6. The speed of mental processes is increased with improvement in the mental condition of retardation.

7. After moderate exercise there is more improvement than after a similar resting period.

CONCLUSIONS.—While the experiments with which we have attempted to determine the effects of active and passive exercise in cases of depression with retardation were made upon only one

[9] Op. cit.
[10] Franz: Op. cit.

patient in Series I and upon two patients in Series II, we feel that the results obtained are of some practical significance with reference to suggestions for treatment.

Owing to the necessary inaccuracy of purely clinical observation, and the misleading statements of patients who have a morbid aversion for any kind of effort, it seems trite to say that more accurate methods should be employed for the determination of the effects of the various methods of treatment. Some alienists advocate a "rest cure" for their patients, while others follow a régime which includes a varying amount of passive and active exercise. In neither case is the value of the treatment demonstrable by the present clinical methods. Some patients improve rapidly and others slowly, so that one never knows whether to attribute the rate of recovery to the natural resistance and the natural recuperative powers of the individual or to the effects of the treatment. It is obvious that the patient is incapable of deciding what is best for him, and equally obvious that the clinician must often depend upon the unreliable data gained by the ordinary clinical tests. The more accurate methods available in the laboratory are, therefore, of considerable importance in that they offer more tangible evidence of the values of the various curative methods. Moreover, it reassures the patient in that he believes something is being done for him. In the experiments just described, S., for example, spoke of their beneficial effect and found much comfort in an assurance of his improvement, which he knew to be backed up by data obtained in the laboratory. In a more extended series of experiments made by one of us, several other patients reported their belief in the benefit of the tests to them.

The results obtained from Ev. and from S. furnish examples of the practical nature of the laboratory methods. While Ev. is an elderly man, we felt that the two hours' walk intervening between his series of experiments might not be excessive. As is shown in Table IV the patient's complaint of great fatigue was not entirely due to his disinclination to taking exercise. The data obtained show an unmistakable fatigue effect. In the case of S., a comparatively young man, there was a consistent abatement of the retardation symptoms after the two hours' exercise, while the same amounts of rest affected either only slightly or not at all

these symptoms. The twenty-five days of alternate rest and vibration unmistakably point to the same conclusion.

Excluding these cases in whom there is a considerable degree of physical depravity incident to old age, somatic complications, or poor nourishment, we believe that there remains a large class of patients whose feeling of inadequacy, retardation, and mental depression are indications for exercise, both passive and active. The amounts of this exercise, we think, should be determined for the individual cases by methods more accurate than the usual clinical observations.

DEMENTIA PRÄCOX IN FRANCE WITH SOME REFERENCES TO THE FREQUENCY OF THIS DIAGNOSIS IN AMERICA.

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A remarkable polemic appeared in the *Journal de Neurologie* (5 et 20 janvier, 1905) in which M. MARANDON DE MONTYEL took up the cudgels for French psychiatry against the German invasion. This polemic, which aims to be at once an exposition and denunciation of false teaching, a warning against its dangers, and an exhortation to be true to French traditions in matters psychiatric, was put forth evidently as an effort to stem the spreading defection in the French camp.

The *Dementia präcox* of KRAEPELIN was the issue.

A primary dementia in young individuals had originally been described by French authors. ESQUIROL in a single classic paragraph [1] in his section on *Idiotie,* mentioned cases in which children of healthy birth presented a normal growth of mind and body up to a certain period, at which their intellectual activity, "not being proportionate to their physical powers," came to a standstill and further development was impossible. PINEL had also described similar cases.

MOREL, who was the first to use the appelation, "*démence précoce,*" gave to the disease the stamp of inherited degeneracy. From this point of view the condition did not represent an epochal

[1] "Quelquefois les enfans naissent très sains, ils grandissent en même temps que leur intelligence se développe, ils sont d'une grande susceptibilité, vifs, irritables, colères, d'une imagination brillante, d'une intelligence développée, l'esprit est actif. Cette activité n'étant pas en rapport avec les forces physiques, ces êtres s'usent, s'épuisent vite, leur intelligence reste stationnaire, n'acquiert plus rien, et les espérances qu'ils donnaient s'évanouissent, c'est l'idiotie accidentelle ou acquise; quelquefois aussi une cause accidentelle arrête le développement des organes et de l'intelligence." Maladies Mentales, 1838, Tome II, p. 342.

accident, but constituted rather "la funeste terminaison de la folie héréditaire. Une immobilisation soudaine de toutes les facultés, une démence précoce, indiquent que le jeune sujet a atteint le terme de la vie intellectuelle dont il peut disposer."[8]

CHRISTIAN later dealt exhaustively with the disease, recording his observations upon the large material at Charenton. CHRISTIAN took stand against the view that dementia präcox was the outcome of hereditary degeneration, and pointed out particularly the fact that up to the onset during the puberal epoch, development was in the majority of cases normal, that the patients had indeed not infrequently shown unusual intellectual activity. With vivid simile he pictured the mental blight with which children of bright promise might thus suddenly be stricken. "Tel, au printemps, un arbre, chargé de fleurs, promet les plus riches récoltes: tout d'un coup la sève tarit, les fleurs se flétrissent et tombent sans avoir été fécondées, et il ne reste qu'un tronc desséché, à jamais stérile."[9]

Whatever differences of opinion existed among various French observers regarding etiology or symptomatology, all had been united upon at least two points, which gave to the disease a distinctive character. These points were, (a) the age of onset, (b) mode of termination. The *démence précoce française* was accordingly a circumscribed disease; it appeared regularly during the pubescent period and ended invariably, after a relatively short interval, in complete dementia.

[8] Traité des Maladies mentales, 1860, p. 566. MOREL describes a typical case in a lad of thirteen (mother insane, grandmother very eccentric), who, up to that age, had excelled his schoolmates in mental attainments, although backward in physical development. "Il était désespéré d'être le plus petit de sa classe quoiqu'il fût toujours le premier dans ses compositions, et cela sans effort et presque sans travail. . . . Il perdit insensiblement sa gaieté, devint sombre, taciturne, et montra de la tendance à l'isolement dépression mélancholique haine pour son père portée jusqu' à l'idée de le tuer." Under treatment the physical condition improved, but another untoward symptom made its appearance. "Le jeune malade oublia progressivement tout ce qu'il avait appris; ses facultés intellectuelles si brillantes subirent un temps d'arrêt très inquiétant. Une espèce de torpeur voisine de l'hébétement remplaça l'activité première, et lorsque je le revis, je jugeai que la transition fatale à l'état de démence précoce état en voie de s'opérer."

[9] Annales Medico-psychologique, Janvier-Octobre, 1899.

When, therefore, the revolutionary synthesis of KRAEPELIN was made public, in which were brought together, as manifestations of a single malady, the various *démences vésaniques* of French authors, the *Katatonie* of KAHLBAUM, the *Hebephrenie* of HECKER, cases included under the *stupidité* of GEORGET, the *confusion mentale* of DELASIAUVE and CHASLIN, and the *Amentia* of MEYNERT, and finally (God save the mark!), the *délire chronique à évolution systématique* of MAGNAN, war was declared at once. The new gospel from over the Rhine threatened the proud structure of French psychiatry at several points. It confounded in one disease-picture conditions generally assumed to be distinct; it erased from the classification the cherished mania and melancholia of PINEL and ESQUIROL as disease entities; it relegated to oblivion most of the so-called secondary dementias which had held so important a place; it did violence to the teaching of MAGNAN who had brought to elaborate fruition the doctrine of MOREL concerning the degenerative phychoses, who had long been the center of a most influential school of alienists, and whose dicta had come to be widely regarded as established principles.

The Heidelberg doctrines were calculated, however, to compel respect if not conviction. They represented, not the theoretic elaboration of the green-topped table, but the outgrowth of continuous, conscientious, minutely analytic bed-side observations, which were kept constantly up to date by a systematic following of the subsequent histories of discharged patients. They carried with them, moreover, a very considerable simplification into the classification of mental disorders, by demonstrating bonds of union in affections not looked upon previously as related. The opposition which the views of KRAEPELIN awakened in France, was nevertheless not likely to diminish when the boundaries of dementia präcox began to extend and to become apparently less sharp and certain; when it was shown that the disease was not necessarily limited to the puberal or developmental period, but might appear at practically any age, and was not therefore *in sensu stricto* a *precocious* dementia; when in the final place it was admitted *ex cathedra* that in a certain proportion of cases the patients might to all intents and purposes entirely recover, the disease being therefore in these cases not a *dementia* at all.

At the parting of the ways in France, there was on the one

side a patriotic retrenchment behind the walls of traditionary diagnostic strongholds; on the other, among men who in the affairs of science know no country but are citizens of the world, the gates were opened to the message from over the borders, that it might be fairly judged upon its merits. To the latter camp belonged first and foremost SÉRIEUX, who in repeated publications[1] brought to the attention of his countrymen the Kraepelinian concept of dementia präcox, which he regarded as the most brilliant discovery in psychiatry since that of general paresis.

The opposing camp, prominent in which was RÉGIS, adhered to the démence précoce of French authors, the more narrowly limited disease as presented by CHRISTIAN. For them the "démence précoce allemande" as such had no existence, but represented a mosaic, a heterogeneous assemblage of conditions, some of which were to be classed with the toxic insanities, the *confusion mentale primitive* of CHASLIN, and others with the *folies des dégénérés* of MAGNAN. To this camp belongs also M. MARANDON DE MONTYEL.

Such was the situation when, at the Congress of French Alienists at Brussels in 1903, during the discussion of the paper of CLAUS on *Catatonie et Stupeur,* it was proposed by M. GILBERT BALLET that at the session of the following year the whole problem of dementia präcox be formally presented for discussion, in the hope that if possible a solution, or a reconciliation of opinions might be reached. The events of the congress which met at Pau, in August, 1904, are too fresh in the memory of all to need recalling in detail. M. DENY, chef of the section Rambuteau for insane at the Salpêtrière, who was charged with the presentation of the question, took his stand more unequivocally and fearlessly under the German banner than any other of his compatriots had yet done.

In the first place, M. DENY categorically denied the existence of the *démences vésaniques,* or secondary dementias, which had figured so conspicuously in French classifications. According to the prevailing teaching the *démences vésaniques* constituted a common terminal demential slough of despond into which plunged

[1] Rev. de psychiatrie, Avril, 1900; Gazette hebdomadaire, 10 Avril, 1901; Rev. de psychiatrie, Juin, 1902.

promiscuously, and beyond hope of later recognition and differentiation, various originally distinct diseases, including mania, melancholia, the degenerative psychoses, etc. BALLET had thus spoken of dementia präcox as *la démence vésanique rapide.*

According to the newer views, a common indifferent terminal dementia is a misnomer. Mental diseases proper may be classified in two great groups:

(a). Dementing processes.

(b). Non-dementing processes.

In the former group, the dementia is to be regarded, not as a secondary condition which succeeds the psychosis proper, but as an essential and more or less progressive symptom of the disease, which is discoverable early in the course of the malady and which carries the distinctive and characteristic stamp of the psychosis throughout, thus often making retro-diagnosis possible in old patients who present the picture of complete mental degradation. The dementias of the various mental diseases are therefore in a sense specific.

It must be assumed that the dementing processes are associated with definite structural changes in the cortical tissue. These alterations, while early demonstrable in some conditions (G. P.), may be at first unrecognisable in others (D. P.). Similarly, the very earliest signs of mental deterioration may escape notice. According to our conception of the dementing process, however, organic change and accompanying clinical manifestation must be present from a very early period in the evolution of the disease, and theoretically, as soon as structure alteration has passed the bounds of the so-called reparable stage, the clinical hall-marks of mental retrogression should become visible. If these views are correct, the great mass of secondary dementias, and among them the *démence vésanique rapide* of BALLET, can have no existence.

Not only did DENY expunge the *démences vésaniques* from his nosographic scheme,—he gave his unqualified adhesion further to the view which dethrones mania and melancholia (excepting KRAEPELIN's involutional melancholia) from the rank of primary disease-autonomies, and describes in their places phases of exaltation and depression occurring in the maniaco-depressive insanity. paresis, the toxic psychoses, dementia präcox, etc. DENY's extreme heresy lay perhaps, however, in his willingness to transfer

en bloc the several conditions described as acute paranoia, *délire polymorphe*, and even the *délire chronique* of MAGNAN to KRAEPELIN'S sub-group *dementia paranoïdes*.

The dementia präcox of DENY is therefore essentially that of KRAEPELIN. He presented it before the Congress as a nosographic and nosologic entity, comprising the simple form of SÉRIEUX and the classic varieties of KRAEPELIN, hebephrenia, katatonia, and dementia paranoïdes. As to the nature of the disease, DENY follows CHRISTIAN in considering it an accidental rather than a constitutional affection, and points out that hereditary stigmata are present only in a minority of cases, and that as a rule the disease overtakes individuals of hitherto assumably normal mentality. He believes it should be classed with the auto-intoxication psychoses.

The Congress at Pau has served to make prominent two facts,—(1) that the Kraepelinian idea has made considerable headway in France, (2) that a unanimity of opinion, however, concerning the status and mutual relations of katatonia, mental confusion, dementia präcox, the so-called simple psychoses (mania and melancholia), and the degenerative insanities, is still far distant. The hostile camp, though it would appear to be numerically weakening, shows no sign of surrender, unless the resort to violent language be taken as a sign of instability. Among the extreme conservatives are those who repudiate the doctrine of KRAEPELIN altogether, partly no doubt because it is German, partly because it is not French, certainly not because the material is so essentially different upon which observations in the two countries have been made.

RÉGIS combats KRAEPELIN'S teaching at every point. He clings tenaciously to mania and melancholia as primary disease forms, likewise to the degenerative psychoses and the systematised deliria. He holds fast also to the *démences vésaniques* assumed to be secondary to all of these forms. KRAEPELIN'S involutional melancholia, he declares, contradicts clinical experience, and the maniaco-depressive insanity is only a "type bâtard de notre folie à double forme." Finally, the increasing prestige of the German dementia präcox he declares to be more than an "*évolution*" (DENY), more indeed than a "*révolution*" (BALLET), and in fact nothing less than a "*bouleversement complet*" of the whole psych-

iatric edifice. Of the conditions brought together in KRAEPELIN'S "mosaic," RÉGIS makes two great groups. To the first he assigns all those cases in which individuals more or less burened with bad heredity come to a psychic standstill at the critical age of puberty and then rapidly dement. These represent the true *démence précoce* (type MOREL), the only one according to RÉGIS which should be retained in the classifications. It is a constitutional malady and may be said to include roughly the cases described by KRAEPELIN under the hebephrenic form. In the second group he places the remainder of the dementia präcox of the Germans. RÉGIS denies that these cases belong to dementia präcox proper and ranges them with the intoxication psychoses as represented by the *confusion mentale,* which ends as a rule in recovery, but may become chronic and lead to secondary mental enfeeblement, which he prefers to call in such cases post-confusional dementia.

In the school of Sainte Anne it was not to be expected that the new teaching would be warmly received. Thus VALLON defends the doctrine of MAGNAN concerning the psychoses of degeneration. He retains also as individual diseases mania and melancholia, and affirms that they may end in *démence vésanique.* For VALLON dementia in any case is not the essential character of a disease process, but rather a terminal and secondary condition.

These men represent the extreme of conservatism. They have pledged their faith to the standards formerly set up by the great masters of their own country, and with the remarkable growth of later years to which the seeds of scientific psychiatry, emanating originally from France, have given rise in an alien soil, they are unsympathetic.

A not uncommon objection, already referred to, and which MARANDON DE MONTYEL sets forth at some length in the previously mentioned polemic, is that it is a contradiction of terms to describe a disease which may appear late in life and from which the patient may entirely recover, as a dementia präcox. This objection is calculated at first glance to win sympathy. When one considers the development of the German concept of the disease, however, it is seen to be invalid and superficial. At most, it is unfortunate that a simple descriptive appellation does not always fit accurately *all* the disease pictures which have either

provisionally or otherwise to be grouped under it. It has been a common experience in psychiatric nomenclature from the beginning, and so long as morbid mental conditions exist, to which in the absense of definite information concerning etiology and pathologic anatomy, clinical symptomatic names have to be given, discrepancies of this sort are unavoidable. HECKER's Hebephrenia and KAHLBAUM's Katatonia, the two diseases out of which grew the dementia präcox of KRAEPELIN, are pre-eminently affections of the developmental period, and it is natural to assume that they are the expression of morbid conditions associated with the transition from youth to adult life. Their exact etiology, however, is entirely obscure, and so long as this is the case, so long as the exact causes are unknown which *must* be in operation in order that the disease may make its appearance, it is futile to assert that they may not become operative beyond as well as during the puberal epoch. Dementia präcox (Hebephrenia) and Katatonia, which KRAEPELIN originally described separately, were later amalgamated on the recognition of common fundamental characters, as well as of transitional forms. For the same reasons dementia paranoïdes, at first classed with chronic paranoia, was also assigned later to the dementia präcox group. This form according to KRAEPELIN is likely to occur later in life than the other two. Moreover the German dementia präcox is not necessarily a rapidly progressive disease. Its development may extend over many years and even decade intermissions may intervene. KRAEPELIN points out that certain patients who are apparently overtaken by dementia präcox in later life, can be shown to have presented symptoms during the period of development which may possibly represent the real beginning of the disease. In these cases the mental defect associated with the initial symptoms may be so insignificant as to escape notice, and becoming conspicuous with the later attack, this is erroneously looked upon as the first manifestation of the malady. Finally, the denomination "dementia präcox" has been retained partly for the sake of convenience, although the disease-concept has been enlarged to include a number of sub-groups, out of which, KRAEPELIN himself admits, several separate and distinct nosologic entities may eventually be resolved. The contradiction of terms at which the purists take offense in cases of late dementia präcox, would, it is

true, be obviated by the adoption of a more comprehensive term, e. g., "Dementia Simplex," suggested by RIEGER.

The bugbear of recoveries in dementia präcox at which M. MARANDON DE MONTYEL and others of the hostile camp recoil, involves in the first place the question of what is understood by "dementia." There is unfortunately a considerable elasticity of meaning attached to the term by different authors. It is used to indicate a stationary end-condition, a progressive mental enfeeblement, and even a temporary functional defect from which recovery is possible. Etymologically, the word has a much broader signification than it has come to possess through the usage of the past hundred years. The Latin *dementia* means simply madness or insanity, (*de*—away from, out of; *mens,* mind); similarly the verb *dementire* signifies to be mad, to rave. Among the laity, and often in newspaper reports, the term is still used in its primitive meaning, the words insanity and dementia being employed interchangeably.

PINEL attached to the term the specific meaning of an extreme and permanent enfeeblement of the intellectual faculties. "Dans la démence, il n'y a point de jugement, ni vrai ni faux; les idées sont comme isolées, et naissent les unes à la suite des autres; mais elles ne sont nullement associées, on plutôt la faculté de la pensée est abolie oubli complet de tout état antérieur, . . . existence automatique."[5]

ESQUIROL described the condition in greater detail, and aptly characterised it as "l'abolition plus ou moins prononcée de toutes les facultés sensitives, intellectuelles et volontaires."[6] Nevertheless the specific quality of dementia as portrayed by PINEL was lost in ESQUIROL's classification by the introduction under the head of *démence aiguë* of an acute and recoverable form of mental dulling due to nutritional anomalies, conditions of exhaustion, intoxication, etc. To this grouping together under the common head "dementia" of both permanent organic defects, and functional disturbances of good prognosis, is due the divergence of opinion and usage of the term among later writers. For the sake of clearness it would seem well if the narrower definition of PINEL

[5] Traité médico-philosophique sur l'aliénation mentale, 1801, pp. 164-6.
[6] Maladies mentales, 1838, Tome II, p. 232.

were universally followed, and if under dementia were described only such cases as show permanent mental deterioration. The expression "acute recoverable dementia" is still retained in some of the text-books, but it is to be hoped that it will finally disappear. KRAEPELIN described *dementia acuta* in his earlier editions, but now places the cases thus designated, under the exhaustion psychoses.

The concept of dementia which would appear to be most consonant with present information, contains, then, two principal points:

(1) The condition is one from which recovery does not occur, being determined by definite and permanent structural changes in the central organs, and particularly in the cerebral cortex.

(2) The condition is not simply a closed and stationary *stadium terminale;* it is rather a disease process, a true psychic necrobiosis.[1]

Adopting this view-point, what is to be said of the cases of dementia präcox which recover? Does it follow, as M. MARANDON DE MONTYEL affirms, that "every recovery represents an error in diagnosis?" Considering the present fluid state of the dementia präcox question, it is doubtless the fact that cases are placed in this group which do not belong there, and that in some instances psychoses originally so classified, which end in recovery, as well also as certain ones which do not, have later to be assigned to other categories. It can be shown, however, that the dogmatic assertion just quoted palpably oversteps the truth.

It is a conspicuous fact that at certain intervals of time new nosographic entities appear on the psychiatric horizon, which have the misfortune to become popular, as it were. In their passage they increase in bulk at the expense of less well defined pathologic conditions, especially by the absorption of numerous cases from that important category in all classifications,—the undiagnosed

[1] PRITCHARD (Treatise on Insanity, 1835, pp. 88-9) described *incoherence* or *dementia* as a progressive morbid change characterised by four successive stages:

(1) Forgetfulness or loss of memory,
(2) Irrationality or loss of reason,
(3) Incomprehension,
(4) Inappetency or loss of instinct and volition.

group, which are often found to fit the new pattern with singular convenience. It is only when the new disease is looked at from the critical viewpoint of a succeeding generation, that it is divested of its irrelevant additions or resolved into its elements, and finally finds its approximate place in the improved classification. Such was the history of the *monomania* of ESQUIROL, and the *paranoia* of later writers (*Verrücktheit*, GRIESINGER), of the *moral insanity* of PRITCHARD, of the *folie des dégénérés* of MAGNAN, of the *amentia* of MEYNERT,—and the *dementia präcox* of KRAEPELIN is no exception to the rule. Moreover, the tendency among the adherents of a new school to out-Herod Herod is in part responsible for the unusual hypertrophy which the new disease-concept at first undergoes. KRAEPELIN reckons 14-15 per cent of the total admissions, in the dementia präcox group. DENY raises this figure to 25 per cent. DENT[a] goes higher with 31.8 per cent and if one includes the so-called "allied conditions,"[b] we have according to DENT, a *full third of all the admissions* belonging to the dementia präcox group! And yet this is not the limit. In the report of the current year of the Connecticut Hospital for Insane at Middletown (NOBLE), *thirty-seven per cent* of the admissions of the previous year are classified as dementia präcox! The allusion of FALRET to the degenerative insanity of MAGNAN, as "*un immense océan, sans limites et sans fond*," may obviously still find application.

As for recoveries, KRAEPELIN allows tentatively 21 per cent, the cases coming from the hebephrenia and katatonia groups. This is indeed a high figure, but it must be remembered that from KRAEPELIN'S view-point many of these apparent recoveries are simply remissions. Moreover he has always been inclined to the view that a recovery in any case is not a recovery in the strict sense, but rather a "*Heilung mit Defekt*" (NEUMANN), a view which has been especially championed by ASCHAFFENBURG. When one considers, however, that the dementia präcox of KRAEPELIN includes cases still described by other authors as confusion men-

[a] Fifth Annual Report, Manhattan State Hospital, West, 1905.

[b] Groups of obscure cases which Dr. ADOLPH MEYER suggests attaching provisionally to the various psychoses with which they appear to have most in common.

tale, melancholia cum stupore, amentia, etc., a fair percentage of recoveries is to be expected. It is admitted by several French writers that a differential diagnosis between confusion mentale and dementia präcox may be difficult or impossible. WERNICKE, referring to the intrapsychic akinesis in similar cases also observes that sometimes "eine Differentialdiagnose zwischen depressiver Melancholie, jenem an sich heilbaren und jedenfalls noch entwickelungsfähigen Krankheitsbilde, und primärer Demenz überhaupt nicht möglich ist."[19] Under these circumstances it is unsafe to say that of a group of cases clinically indistinguishable from each other at first, only those which end in definite mental deterioration may be called dementia präcox, while those which recover must necessarily belong to another distinct class, represented by the confusion mentale. The fact that we do not possess definite criteria by which it can be stated at the beginning in every case, whether the patient will regain mental health, whether possibly a remission will occur, or whether the process of permanent mental regression will establish itself—and in the latter case, whether only a mild or a severe degree of dementia will be reached—the fact that these various events are not always foreshadowed, is no reason for denying the validity, or at least the serviceability of a classification which brings together conditions which may present all of these several outcomes. Dementia präcox is conceived as a psychosis which is essentially a dementing process, and this process has a beginning, a course marked by more or less constant features, and an event which is qualitatively, although not quantitatively characteristic. Underlying this clinical course is an anatomico-pathologic process—to be sure, not yet defined—which may likewise be assumed to present quantitative variations in its manifestations. In one instance it may establish itself early and develop rapidly, so that the disease may deserve the appellation "florida," as in certain cases of phthisis or paresis; again, the initial phenomena may be slight and the development slow; while in still other cases we are compelled to assume that the lesions may be so insignificant as to be fully reparable.

[19] Grundriss der Psychiatrie, 1900, p. 542.

The German synthesis, which at most, claims to be only a provisional one,[11] is abundantly justified, and represents a deeper and safer clinical interpretation than one which denies the relationship of disease conditions which may differ only in the fact that all do not end alike in dementia. To affirm categorically that a case which appears after the developmental period of life is past, or which does not terminate in conspicuous dementia, *cannot* belong to the group described under the name of dementia præcox, is as inconsequent as to declare that every case of typhoid fever with hemorrhage or perforation *must* die, or that every patient with influenza *will* have recurrent attacks, and that the absense of recurrence in the one instance, or the recovery of the patient in the other, indicates an error in diagnosis.

That cases of katatonia, possibly also of hebephrenia, may recover, has to be admitted; when, however, MARANDON DE MONTYEL *adds* to KRAEPELIN'S 21 per cent of apparent recoveries, the 44 per cent of MASSELON'S cases which are able to resume their former occupations, and makes thus a grand total of 65 per cent of favorable terminations, citing these figures for the effect of a *reductio ad absurdum,* he commits a statistical fallacy which needs no comment.

The charge that the dementia præcox of the Germans tends to swallow up the whole scheme of classification in mental diseases, rests upon a superficial consideration of the facts. As has been said, the diagnosis has had the ill-fortune to become a popular one, but the hypertrophy in which the popularity has in some quarters resulted, cannot justly be said to be altogether the fault of the original new disease-concept.

In this connection the accompanying curves, showing the fortunes which the dementia-präcox idea has enjoyed in various

[11] Unter dem Namen der Dementia præcox sei es uns gestattet, vorläufig eine Reihe von Krankheitsbildern zusammenzufassen, deren gemeinsame Eigentümlichkeit der Ausgang in *eigenartige Schwächezustände* bildet. Es scheint zwar, dass dieser ungünstige Ausgang nicht ausnahmslos eintreten muss, aber er ist doch so ungemein häufig, dass wir bis zur weiteren Klärung der hier ihrer Lösung harrenden klinischen Fragen an der gebräuchlichen Bezeichnung festhalten möchten. . . . Ob die Dementia præcox in dem heir umschriebenen Umfange eine einheitliche Krankheit darstellt, muss vorderhand zweifelhaft bleiben." KRAEPELIN, Psychiatrie, 1904, pp. 176, 271.

American hospitals for the insane during the past ten or fifteen years, are interestingly illustrative. Whether these curves represent in every instance the actual opinions of the chief of the hospital, it is impossible to say. The official figures published in the annual reports furnish the only constant criterion by which one is able to judge—and from these figures the curves have been accurately constructed. They are self-explanatory. The black curve represents collectively all cases described by various authors as manias and melancholias—acute, recurrent, and chronic, circular insanity, periodic insanity, and involutional melancholia. In many hospitals the classification has undergone changes and new names have been assigned, as indicated. The curve stands, however, for the same group of cases throughout, as nearly as could be calculated. From the Kraepelinian view-point it represents the aggregate of cases included under maniaco-depressive insanity and melancholia. Similarly, the dotted curve indicates the aggregate of cases described as primary and acute dementia, hebephrenia, katatonia, and dementia präcox. As will be seen the tendency has grown to follow KRAEPELIN and group all these conditions under one head, that of dementia präcox. In numerous hospitals the category "Paranoiac States" has recently been somewhat prominent in the classifications. A certain proportion of these cases would perhaps later appear in the dementia präcox group, but their designation is so vague that they have not been included in our figures.

Several facts are made conspicuous by the curves.

(1) The time-honored, all-embracing, receptacles—mania and melancholia, have in many representative American institutions gradually been losing prestige. Ten years ago it was common enough to find 50 to 70 per cent of the total admissions classed under these two heads. Since that time these diagnoses have decreased in frequency, in some instances gradually (Curve I), but often fairly abruptly (Curves II-IV) until today they are frequently found to range from 15 to 20 per cent.

(2) Most conspicuous among the diagnoses which have grown at the expense of the mania-melancholia group is that of dementia präcox. In the hospitals where the new disease has found favor, this increase is no less startling than the decrease in the former group. Moreover, the striking relation between the two curves,

one being often almost the exact reverse of the other, indicates clearly that the sudden rise of dementia præcox was accomplished largely in these instances by the simple transference of a mass of cases from the mania-melancholia category. This remarkable diagnostic transformation, graphically represented by the crossing of the solid and broken curves, stands in part for improved methods of observation and classification. It also illustrates, however, the unfortunate tendency, already mentioned, of popularizing a new disease, and it is safe to conjecture that in certain institutions where the dementia præcox curve suddenly shot up to 25 or 30 or 35 per cent of total admissions, a material drop in the curve will occur in due process of time.

(3) In a certain number of hospitals, in contradistinction to those just referred to, the influence of the newer teachings has apparently been felt very little or not at all. In these, the mania-melancholia group still maintains its swollen proportions, and dementia præcox—usually under the old name "primary dementia," occupies an extremely insignificant place (Curve V). Sometimes a slight but inadequate tendency has manifested itself to diagnose dementia præcox more frequently, and less frequently mania and melancholia (Curve VII).

(4) Still other clinics occupy a mean position between the two extremes mentioned (cf. Curves IV and V). In these institutions, the symmetric decrease and increase respectively of the mania-melancholia and dementia præcox groups, while conspicuous, was not so reactionary as in those first alluded to. For example in Curve VIII, which may perhaps be looked upon as the most rational of the series, dementia præcox did not spring from the ground to the clouds like the fabled bean-stalk, but was a considerable factor throughout the period represented. Likewise the mania-melancholia group in its most palmy days did not in this case exceed 37 per cent of the total admissions.

Exceptionally, as at McLean Hospital (COWLES), the climax in the diagnostic transformation was reached comparatively early and has already been followed by a moderate reaction in which the mania-melancholia class—under the name, "depressive-maniacal insanity" (COWLES)—is again enlarging and dementia præcox somewhat symmetrically diminishing.

As has been said, the curves here presented are based upon the

published reports of the several hospitals. That these may not, however, always correspond exactly with the actual states of opinion at these hospitals is shown by the fact that in the case of the Manhattan State Hospital, West (the first report of which appeared in 1900), superintendent DENT, in the text of his report of the current year, estimates the number of cases of dementia präcox (and allied conditions) at 34 per cent of all admissions, while the mania-melancholia group reaches only a little above 18 per cent. In the statistical tables of this hospital for the same year, however, a very different ratio is presented. Here the mania-melancholia group stands at 56 per cent and dementia präcox (primary dementia) at 12 per cent.[12] Furthermore, in the Sheppard and Enoch Pratt Hospital, where from 10 to 15 per cent of our admissions are diagnosed dementia präcox, in the official tables published up to 1903, this category did not appear.

It has been truthfully asserted that the newer scheme of classification in which dementia präcox occupies so prominent a place, destroys the two most cherished disease-concepts inherited from the older masters—*mania* and *melancholia*. It is well-known, however, that the denial of the existence of these two forms as distinct diseases, came not originally from Germany, but was heard long ago in France, the land of their new birth.

Wrote MOREL in 1860:[13] "Je ne rejette ni la manie, ni la mélancholie, ni les diverses perversions des sentiments; mais je n'en fais pas les éléments de ma classification. . . . L'excitation et la dépression, dans leur acception la plus large, ne sont que des symptômes, transitoires dans quelques cas, plus permanents dans

[12] It is to be observed that refinements of diagnosis have been more or less hampered, at least so far as the official reports are concerned, in the New York State hospitals, by the fact that the Lunacy Commission of that State imposed upon all the hospitals a cut and dried scheme of classification containing a half-dozen or so piegon-holes, into which the officers of the various hospitals, whatever their own opinions may have been, have been required to fit all the cases admitted under their care.

This stereotyped scheme which recognizes only *mania* and *melancholia* and their various symptomatic sub-groups, *circular insanity, dementia,* terminal, senile, primary; *paranoia, paresis, epilepsy, imbecility, idiocy,* has been binding without alteration for the hospitals of New York State since 1888.

[13] Traité des Maladies Mentales, pp. viii, 271.

d'autres, et alternant entre eux. Un malade peut être exalté jusqu'à la fureur et la convulsion, déprimé jusqu'à tomber dans l'extase, la stupeur, la catalepsie, sans qu'il soit permis de voir d'autre chose que l'expression du mode particulier dont le système nerveux manifeste ses souffrances sous des influences pathologiques déterminées; mais, encore une fois, ces divers états symptomatiques, en raison même de leur mobilité, ne sauraient être le point de départ d'une classification immuable . . . la manie (exaltation) et la mélancholie (dépression) sont des symptômes que l'on rencontre dans toutes les variétés de la folie, et qui, par conséquent ne constituent pas des formes essentielles.

Similar ideas were expressed by FALRET[24] in 1863: "Ces formes sont si peu naturelles que l'on a été conduit à admettre, par exemple, des manies mélancholiques et des mélancholies maniaques. Tous les jours, on voit survenir un accès maniaque chez un malade atteint d'abord de délire partiel (mélancholie), et, réciproquement, on observe des maniaques chez lesquels prédominent des séries d'idées mélancholiques ou des idées fixes qui servent à caractériser les diverses variétés de l'aliénation partielle. De plus, ces prétendues formes n'ont aucune marche spéciale et déterminée. Il est impossible de prévoir ce que deviendront dans l'avenir un maniaque ou un mélancholique que l'on observe à une période donnée de leur affection. Enfin, la transformation de la manie en mélancholie et *vice versa*, que plusieurs auteurs avaient déjà constatée, d'une manière accidentelle, mais dont la succession régulière nous a servi à constituer une forme spéciale, sous le nom de folie circulaire, est venue fournir un dernier argument contre l'admission de ces deux états symptomatiques comme espèces véritables de maladies mentales."

It must be said that one of the most welcome signs of the times is the fact that the warfare over the dementia präcox of the Germans, shows no tendency to abatement, and that discussions and arguments *pro et contra* continue to appear on all sides. The new disease-concept has had two potent enemies to contend with—two tendencies mutually contradictory, both preeminently human,—(1) the spirit of too ready acceptance, which soon ends by seeing in every third or fourth case of mental disease an

[24] Maladies Mentales, J. P. FALRET, p. xxxiv.

instance of the new malady; (2) the spirit of biased and unconditional negation, which sees in the new description only a useless, even mischievous, restatement of old facts, and categorically denies the existence of the specific characters which the new synthesis presents. These two opposing tendencies are gradually being overcome by a third—the spirit of impartial critique, through which, it is to be hoped, a more general agreement will eventually be reached as to the real nature and significance of dementia präcox in the psychiatric classification.

Regarding the attitude of M. MARANDON DE MONTYEL there is but one word more to add. He begins by accusing the German disease-concept of swallowing up the whole field of mental pathology: he ends by *identifying absolutely all three forms of the dementia präcox of* KRAEPELIN with the degenerative psychoses of MAGNAN. "La similitude absolue avec les folies dégénératives des trois formes délirantes de la démence précoce de M. KRAEPELIN est donc évidente. . ." [15] Thus by a patriotic inconsistency he denies the right of engulfing to the German, but allows it without scruple to the French disease. Moreover he repeats that the *héréditaires,* comprising the degenerative psychoses of MAGNAN do not dement. "Il est de règle que les vrais dégénérés d'ordinaire guérissent et dans tous les cas ne deviennent jamais déments." Therefore the cases described by KRAEPELIN and his pupils, and ending in a specific dementia, the characters of which are so well known, do not dement at all, and the disease is consequently non-existent. Nothing simpler. Indeed M. MARANDON DE MONTYEL says explicitly: "Ce n'est pas seulement, en effet, les deux tiers, comme pour leurs prétendus déments précoces, qui sortent de l'asile et reprennent la vie commune, mais la presque totalité." [16]

The above deductions are a sufficient comment upon themselves.

[15] Les formes de la démence précoce, Annales Méd.-psychologique, Sept.-Oct., 1905.

[16] Loc. cit.

LEGEND TO THE CHARTS.

The accompanying curves express the varying frequency of diagnosis of cases in the two great disease-groups, *dementia præcox* and *maniaco-depressive insanity*, in nine representative American clinics, during a series of years.

With one exception the curves are based entirely upon the figures published in the official tables of the annual reports of the respective hospitals. In one instance (Curve III), the points for 1904 (D. P., 34%; M.—D., 18+%) correspond, not with the figures in the statistical tables, but with the assumably more trustworthy ones in the superintendents' text analysis of admissions.

The unbroken curve comprehends together all diagnoses of various authors of the several forms of mania, melancholia, recurrent, periodic, or circular insanity. All these types would be included under the melancholia and maniaco-depressive insanity of KRAEPELIN.

The broken curve represents all diagnoses of conditions which could be placed in the various subdivisions of the dementia præcox group.

Changes in the nomenclature which occurred from time to time in the official classifications of the several hospitals, are noted in the curves, which are referred to in greater detail in the text.

CHART I.

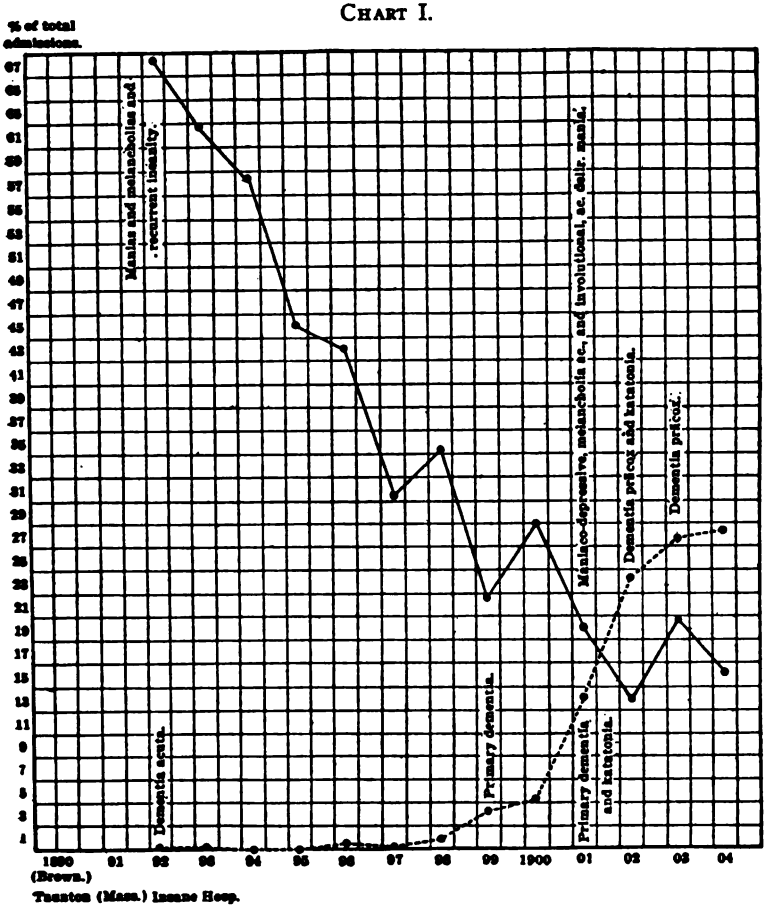


CHART II.

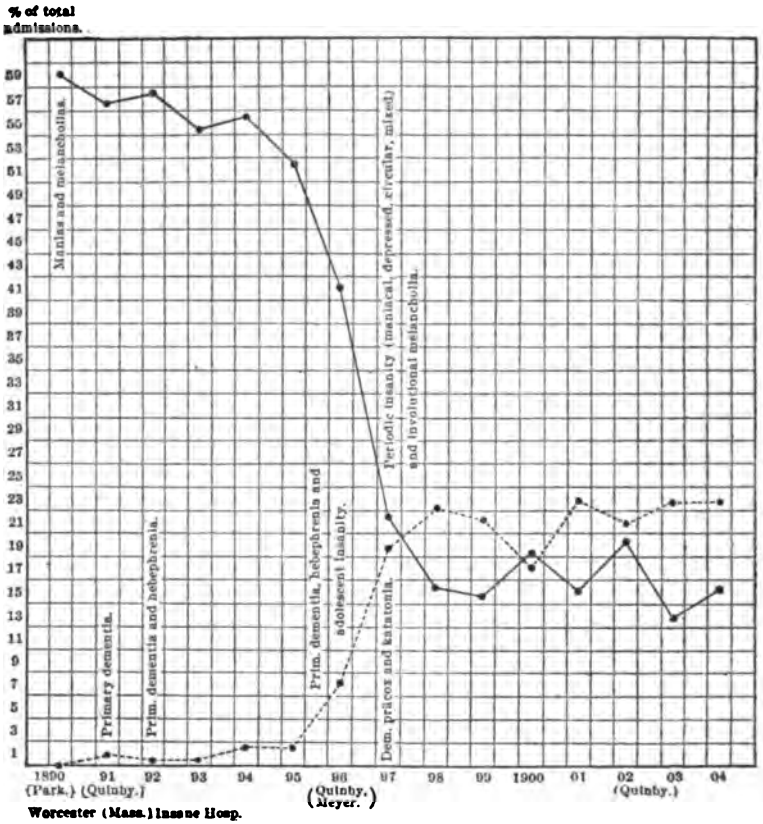

% of total admissions.
59
57
55
53
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
19
17
15
13
11
9
7
5
3
1
Manies and melancholias.
Primary dementia.
Prim. dementia and hebephrenia.
Prim. dementia, hebephrenia and adolescent insanity.
Dem. præcox and katatonia.
Periodic insanity (maniacal, depressed, circular, mixed) and involutional melancholia.
1890 (Park.) (Quinby.) 91 92 93 94 95 96 (Quinby, Meyer.) 97 98 99 1900 01 02 03 04 (Quinby.)
Worcester (Mass.) Insane Hosp.

Chart III.

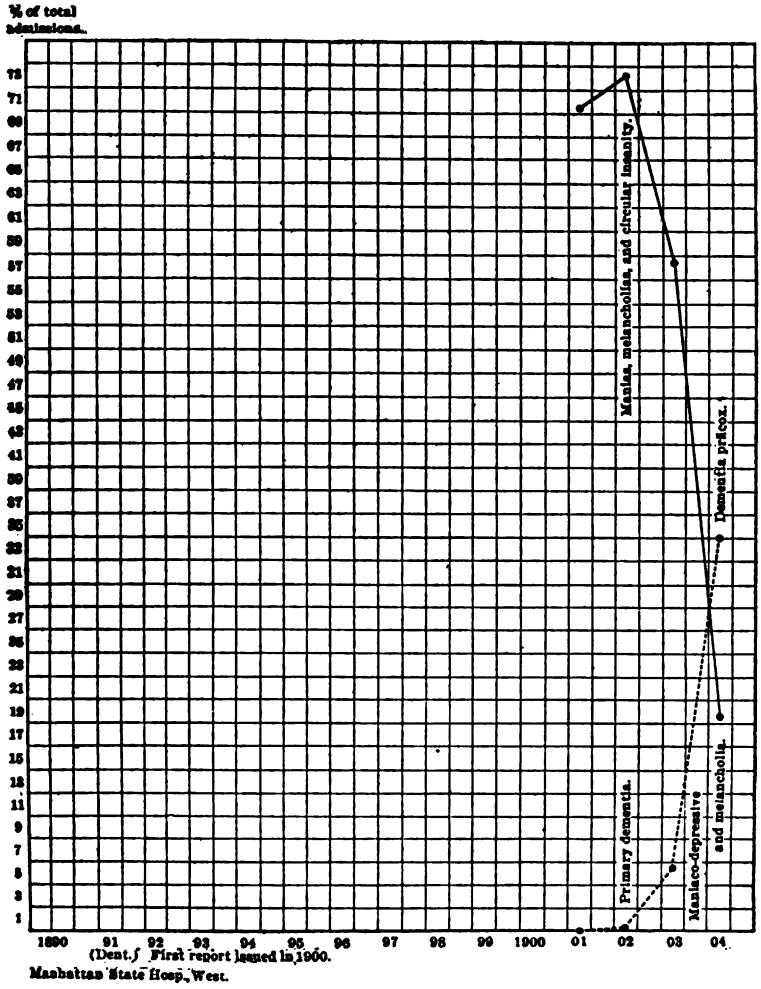

% of total admissions.
73
71
69
67
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61
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31
29
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25
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21
19
17
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7
5
3
1
1890
91
92
93
94
95
96
97
98
99
1900
01
02
03
04
Manias, melancholias, and circular insanity.
Dementia præcox.
Primary dementia.
Maniaco-depressive and melancholia.
(Dent.) First report issued in 1900.
Manhattan State Hosp., West.

CHART IV.

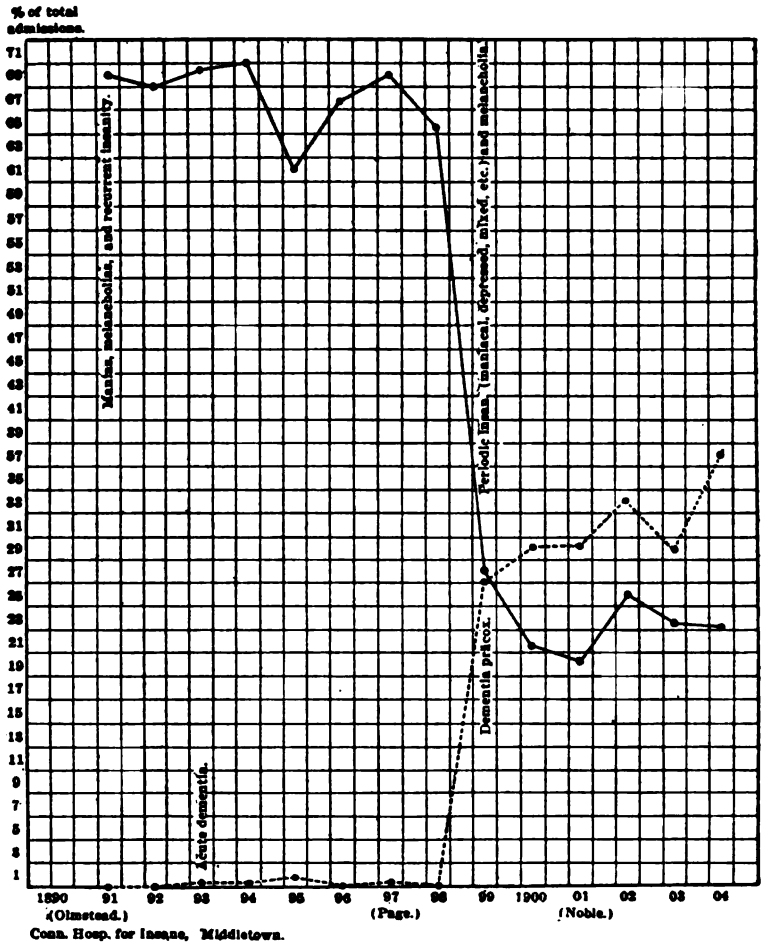
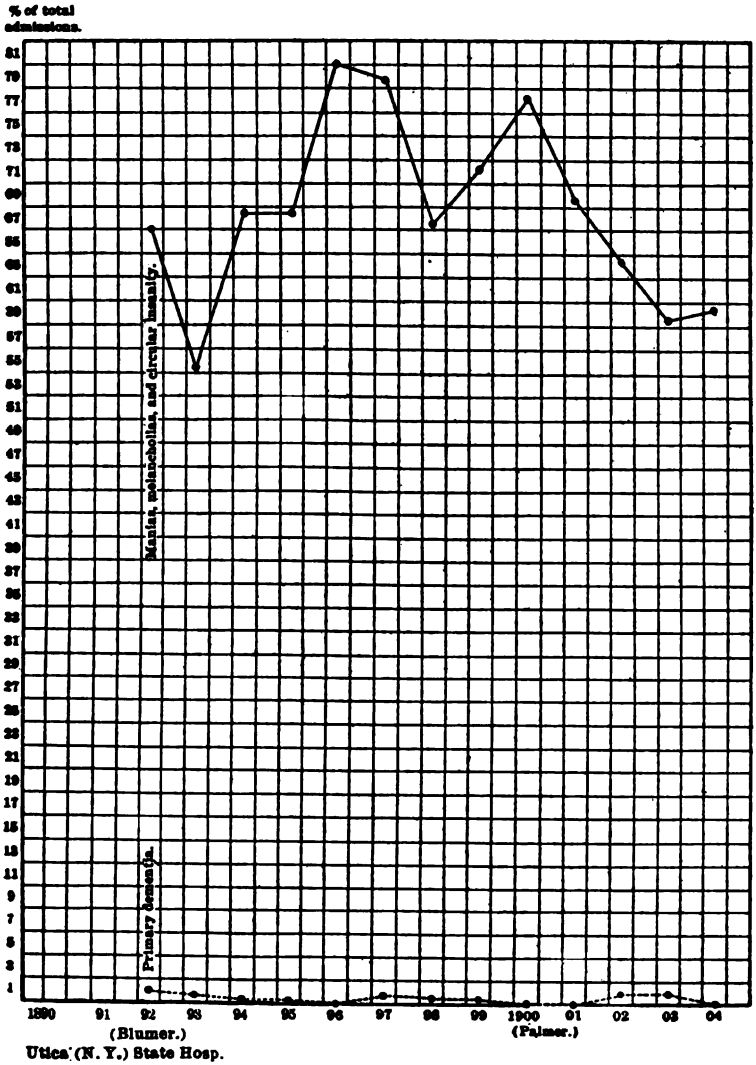
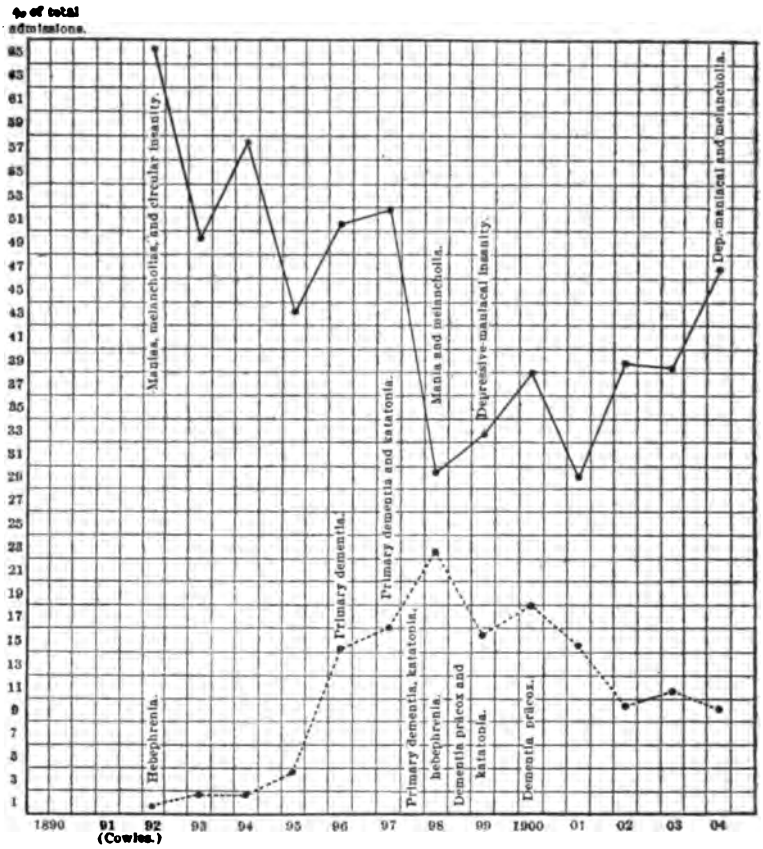

% of total admissions.
Mania, melancholia, and recurrent insanity.
Periodic insan. (maniacal, depressed, mixed, etc.) and melancholia.
Dementia præcox.
Acute dementia.
1890 91 92 93 94 95 96 97 98 99 1900 01 02 03 04
(Olmstead.)
(Page.)
(Noble.)
Conn. Hosp. for Insane, Middletown.

CHART V.



Utica (N. Y.) State Hosp.

Chart VI.



McLean Hosp., Waverly, Mass.

CHART VII.

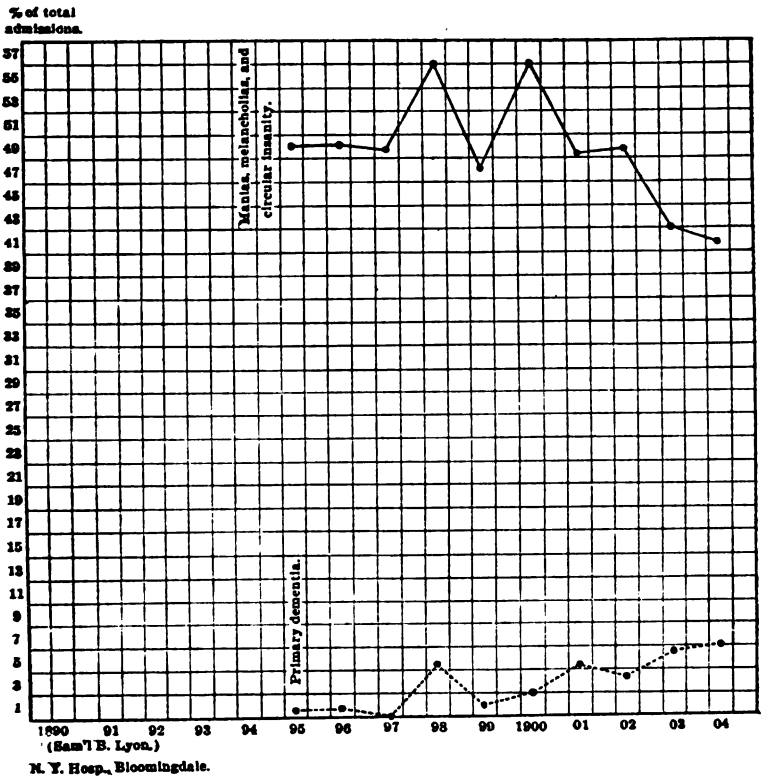
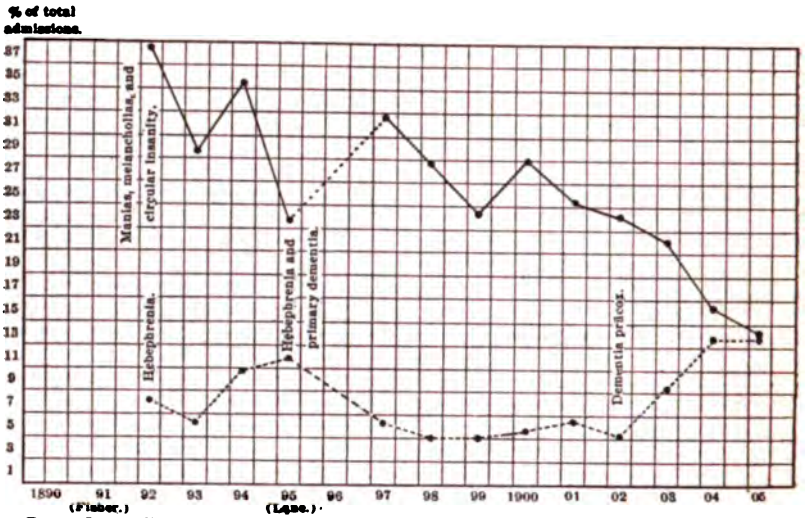
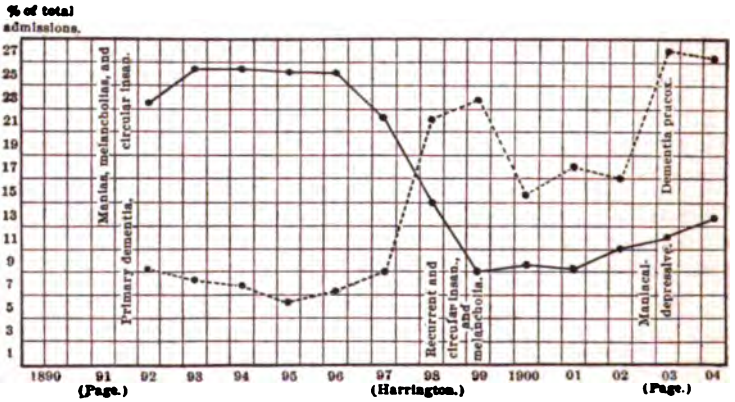

% of total admissions.
37
35
33
31
29
27
25
23
21
19
17
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11
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7
5
3
1
Manias, melancholias, and circular insanity.
Primary dementia.
1890
91
92
93
94
95
96
97
98
99
1900
01
02
03
04
(Sam'l B. Lyon.)
N. Y. Hosp., Bloomingdale.

Chart VIII.



Boston Insane Hosp.

Chart IX.



Danvers (Mass.) Insane Hosp.

A STUDY OF SOMATIC IDEAS IN VARIOUS PSYCHOSES.

By THEODORE A. HOCH, M. D.,

Assistant Physician and Pathologist, Worcester Insane Hospital, Worcester, Mass.

"In its primitive form pain is always physical, that is to say connected with external or internal sensations. Sufficiently precise as regards superficial parts of the body, especially the skin, its localization is more vague when it is seated in the deeper parts, the viscera, the instruments of organic life. In the last case, when the pain is of internal and non-peripheral origin, coming from the great sympathetic or related vagus nerve, it is accompanied by a state of anxiety, of depression or of anguish, which we shall often encounter and which frequently causes it to be said that 'it seems to the patient that the workings of nature within him are suspended.'" The above quotation is taken from Ribot (1), and in a concise form differentiates real pain from the more vague visceral feelings which, in the insane, so frequently serve as a foundation for somatic sensations.

Of the many delusions entertained by the insane, perhaps none are more distressing than those pertaining to their physical welfare. Even in normal individuals, slight bodily ailments cause greater or less mental depression and anxiety; and worry and grief are accompanied by trivial physical pains or exaggerate those already present. Of still greater moment is the personal welfare of the individual who suffers imaginary tortures and is surrounded by imaginary dangers, especially when hampered by faulty reasoning associated with an inability to separate the real from the unreal. The basis of hypochondriacal ideas may be some visceral disease, peripheral neuritis, etc., which gradually becomes elaborated in the patient's mind far beyond the actual existing condition; or the idea may have no physical foundation whatever and is built up of previous delusions which serve as a means of misinterpreting normal sensations or occurrences. Many mental traits have been shown to have a close relation to the

motor mechanism and bodily functions; and aside from the deliria, definite psychoses have been described accompanying visceral diseases.

The relation of mental changes to visceral disturbances was clearly demonstrated by Head (2). He showed the presence of well-marked hallucinations and depressed affects in many diseases, especially of the heart, lungs, and abdominal viscera. His observations were made on patients without a previous psychosis and in whom the mental manifestations arose when the bodily disease was well advanced. The degree of mental derangement bore a direct relation to the intensity of the disease. These psychoses are usually transitory, but often they are the initial symptoms of a prolonged psychosis which may far overreach the physical disease. Depressions of varying intensity are often observed which are wholly out of proportion to the gravity of the disease. Hallucinations, delusions of various kinds and self-accusations, are often present with little or no insight into the condition.

Fischer (3) studied the relation of heart disease to various psychoses and concludes that: (a) heart disease may be the exciting cause in precipitating psychoses in predisposed individuals; (b) the uncompensated heart lesions may induce a psychosis in individuals not predisposed, as a result of disturbance of cerebral circulation and chemical blood changes; (c) the psychoses (under b) are of the type of hallucinatory confusion. The color of the hallucinations is given by the abnormal sensations. If prolonged they may end in dementia.

Krafft-Ebing (4) mentions the following somatic causes for the neurasthenic conditions: bodily over-exertion, toxic influences, syphilis, debilitating effects of the puerperium, chronic local diseases, gastro-intestinal diseases, movable kidneys, diseases of the male and female genitalia, diseases of the nose, unhygienic sexual life, anæmia, poor diet, anti-fat cures, mineral water cures, cold water cures, and hot baths. From this great variety of causes it is evident that individual idiosyncrasies play a great part in the production of neurasthenic states in predisposed neurotic persons.

Kiernan (5) gives a list of diseases which are said to cause, modify, or cure insanity. He mentions more particularly rheumatism, gout, typhoid fever, measles, acute pneumonia, acute

nephritis, and variola, as exerting a favorable influence, perhaps with too much stress, since he goes as far as to say "Paretic dementia is said to have been cured by variola," and, later, "Phthisis renders paretics more or less suspicious."

We frequently have an opportunity to observe the influence which some intercurrent disease has upon a pre-existing psychosis, causing either an exacerbation or amelioration of the mental symptoms. A manic attack may readily turn into a delirium or some grave disease may subdue an excitement.

Ill health is a common general etiological factor assigned in mental diseases. With few exceptions it is rather one of the many acute exciting causes which precipitate the psychosis in a previously neurotic individual. The presence of a physical disease in such persons brings about a concentration of attention upon themselves. They become worried and depressed and soon have permanent morbid somatic ideas with little or no foundation. Psychoses in which there is worry, anxiety and depression, as in melancholia, and the depressed phases of manic-depressive insanity and dementia præcox, may have an acute or sub-acute onset during some illness. In women menstrual disturbances are frequent exciting causes.

In 1869, Mayer (6) studied the influence of menstruation on mental disturbances and gives a table showing the development, or aggravation of mental symptoms before or after menstruation. 2100 women were examined and 400, or 19.05 per cent, showed some alteration. He gives the following table:

	Cases.	Per Cent.
Cephalæa and prosopalgia	86	21.50
Cardialgia with or without nausea	67	16.75
Hysterical convulsions	52	13.00
Hemicrania	45	11.25
General feeling of weakness	37	9.25
Præcordial Angst and dyspnœa	23	5.75
Feeling of cold	22	5.50
Depression	22	5.5
Hyperæsthesia and anæsthesia of peripheral nerves	15	3.75
Vertigo	8	2.00
Mastodynia	5	1.25
Chorea	4	1.00
Memory defects	4	1.00

	Cases.	Per Cent.
Epileptic attacks	2	.5
Feeling of lightness	2	.50
Catalepsy	2	.50
Aphonia	1	.25
Trismus	1	.25
Feeling of emptiness	1	.25

Where a physical disease co-exists with a depressing psychosis, the patient may entirely lose sight of his mental trouble and become so absorbed in his physical condition that in a short time firm rooted somatic delusions are elaborated.

Somatic delusions belong primarily to the various states of depression. They may arise in patients who are depressed and agitated, and who spend much time in self-analysis. If the depression is accompanied by a suicidal attempt by taking poison, etc., the patient is thereafter convinced that his throat and stomach are damaged beyond repair.

In psychoses with a paranoic coloring, somatic ideas are more commonly engrafted upon some delusion. The patients experience peculiar feelings which are attributed to electricity, hypnotism, etc., and are associated in their minds at once with the other persecutory ideas. In alcoholic psychoses of this nature, various paræsthesias or pains along the nerve trunks, may underlie these ideas. At times they may develop insidiously. Often tactile hallucinations, or paræsthesias of a sexual nature, receive faulty interpretations on the basis of other delusions. The occurrence of hallucinations of taste and smell in connection with delusions of a sexual nature is very striking.

Somatic ideas are at times very changeable, depending upon the environments, or they may even be a part of a general euphoric condition, pleasant in nature, and associated with other delusions of grandeur, centering about their own personality. Klein (7) sought to refer the euphoristic states of general paralysis to paræsthesias of an agreeable nature.

Previous existing physical disease may be the direct cause of these ideas, and lighter forms of peculiar subjective sensations, such as hot flashes, numbness and prickling may exist with a real basis, but on a delusional principle. Where a peculiar sensation is experienced by a paranoic patient, however mild or changeable,

it is another link in the chain of persecution. These somatic ideas usually appear late in paranoic conditions and some unknown and mysterious force is sought in explanation of the sensations. Somatic ideas are often transitory symptoms which may be fabrications, pure and simple, or which may have as a result a prominent though short period of affect without insight. The expression of these ideas may be only once or variable, showing momentary concentration of some thought to the ego.

Wollenberg (8) divides hypochondriacal ideas into two large groups, viz., the constitutional and the accidental—the latter he subdivides into those originating from (1) abnormal ideas; (2) those following some exhaustion, or illness; and (3) those depending on a disturbance of the cœnæsthesia. Those depending on a disturbance of the cœnæthesia are really physiological, inasmuch as they depend upon natural changes such as the climacterium. Our cases are all of the accidental type. They are, however, largely the result of some functional brain alteration where normal physiological sensations are transformed into pathological somatic ideas; in other words, they are illusions of feeling.

While pleasure and pain are the most marked phases of pure subjectivity, somatic sensations in the insane, as a rule, may be said to be those of discomfort, pain, and anguish, especially those relating to internal sensations, where the feelings are with difficulty located definitely, but which are referred to some special organ or region, depending upon the enlivened imagination and defective judgment of a diseased mentality. Even where organs are involved which, when stimulated, produce pleasurable or voluptuous sensations in the normal individual, the feeling is one of irritation and is coupled with abuse on a delusional basis, and referred to outside influences, such as electrical, hypnotic, etc. These sensations, when referring to the sexual organs, are invariably attributed to external causes, on a basis of delusions of persecution and are reacted to by threats, violence, and irritability. They are complained of freely with a view of apprehending the perpetrator and of stopping the abuse. Unfortunately these delusions are very stable and in themselves suggest a chronic condition and an unfavorable outcome and are found in the degenerative psychoses, appearing early in dementia præcox of

the paranoic type, in the paranoic states following the involution and less commonly in alcoholics. In the latter the brain itself is commonly the seat of peculiar sensations. It is acted upon by a machine or some electrical device which is often blamed for the transmission of the hallucinations, putting the voices into the ears and projecting faces and pictures before the eyes.

The cutaneous sensations are usually quite definitely localized and more acutely painful than the visceral feelings and are sometimes limited to regions of certain nerve distributions. The various paræsthesias which may occur in normal individuals are magnified and misinterpreted and the explanation is sought in electrical and other influences in the hands of an enemy. Neuritis in the course of alcoholic psychoses, also gastric crises and girdle pains in tabetic general paralytics, are examples of this type. Often rheumatic pains in the joints are misinterpreted on a delusional basis, as electric shocks thrown upon the patient by unseen persecutors.

The milder sensations in the skin gradually merge into slight tactile hallucinations and sensory illusions with mild reaction on the part of the patient. Later the delusion may become so fixed and tenacious that it is accepted as a fact without further reasoning, even if abnormal sensations no longer exist. Thus a patient may pass through the acute phase of a beginning dementia præcox, stubbornly refusing food because he has no stomach, and leading a wretched and miserable existence with great depression and worry. Gradually he lapses into a more indifferent state, perhaps passes the stomach tube on himself for his daily food, and soon begins to eat. The former domineering idea is dropped from the foreground and a condition of apathy and dementia supervenes with but little thought and concern about himself. If asked about his stomach he may answer with a smile, "I have none," but will continue to eat. Again there are deteriorated patients who get on well from day to day but who show a multiplicity of somatic delusions, transitory and changeable in character, without affect and without altering much the course of their daily life; whose physical health is good, but whose minds are in a dilapidated condition; whose judgment is faulty and who are unable to draw logical conclusions or deductions. Their mental sphere is so narrow as to misinterpret occurrences and actions of others;

center them upon themselves and the distorted imagination produces, among other ideas, delusions somatic in nature.

The more highly specialized senses,—hearing, sight, taste, and smell,—may develop a very prominent hallucinosis, but are less often accompanied by somatic or subjective sensations. To an olfactory hallucination may be added a feeling of irritation of the nasal mucous membrane, by some imaginary powder thrown into the air. A biting and gnawing of the tongue is often associated with hallucinations of taste, especially when underlying delusions of poisoning.

It is rarer, however, to have pronounced somatic sensations of the eyes and ears coincident with visual or auditory hallucinations. At the most a rumbling sensation is felt in the ear, or a blinding light is experienced in the eye.

Edmund Parrish (9) says that hallucinations of taste and smell are very difficult to distinguish from illusions and also from hyperæsthesia of these sensations, and, on the whole, are infrequent: for instance, resulting from disease of the mouth or tongue. Olfactory hallucinations are seldom of an agreeable nature. They seldom appear alone but are frequently associated with other sensory fallacies. They are frequently found in local diseases of the ovaries and of the reproductive organs in general.

The somatic ideas of the paranoic states have a strong delusional basis with but little or no actual physical disease of the parts involved. The ideas are very flexible and the details are altered or receive new interpretations under different environments. Thus strong hypnotic or electrical influences often cease abruptly for a brief period after the admission to the hospital. Soon, however, a new system is evolved or the old one is more elaborated. Either former persecutors are able to transmit their powers over long distances, or they use the nurses, physicians, etc., as their agents, or new tortures are inflicted by those who come in daily contact with the patient. By gradual evolution the original delusion may no longer exist.

Hallucinations of the cutaneous sensibility, of the organic senses, and the like, are not easily distinguished from paræsthesias and however important they may be in building up the mental delusions they are, as a rule, too vague to influence the content of thought directly. It is only when a darkened intelligence

seizes them as a basis for a new conception of the ego and the environment that they become of primary significance.

In the words of Ribot (10), it is the organic sense, the sense of the body, usually vague and obscure, but at times clear in all of us, that excites in each animal the basis for its psychic individuality.

Attention depends on the mental state. Pathologically, spontaneous attention may become a fixed idea. The center of attraction is established which little by little gains complete control of the consciousness; then it grows to be a perpetual pre-occupation, an incessant inception of the state of each organ and the products of each function.

The ideas founded on a general breakdown of the body, a definite disease, pain, or some distinct physical etiology are accompanied by a deep depression, fear, anxiety, and a hypochondriacal condition and are not influenced by a change of environment. The patient is very introspective and gives as proof of his particular assertions the general emaciation of his body. Coincident with physical improvement there is usually a parallel disappearance of the somatic delusions. Such ideas, in themselves, call for a favorable prognosis modified by the general mental and physical state of the patient.

While nearly all forms of mental disease show somatic traits, from the mildest paræsthesias to the more profound ideas of absent vicera and *délire de negation,* certain types seem to conform to a definite symptom-complex.

A study of the following table, which comprises an analysis of 1564 cases, will serve to show the frequency of somatic ideas in the various psychoses. In 221 cases, or a little over 12 per cent, ideas of a hypochondriacal nature were present, which in many instances bore an intimate and important relation to the other symptoms.

Psychoses.	No. of cases examined.	Somatic ideas present.	Per cent.
Dementia præcox	357	80	22.40
General paralysis	191	18	9.42
Senile dementia	169	8	4.73
Paranoic condition	157	41	26.11
Manic-depressive insanity	106	7	6.60
Alcoholic insanity	106	19	17.92

Psychoses.	No. of cases examined.	Somatic ideas present.	Per cent.
Organic dementia	59	1	1.69
Melancholia	52	42	80.76
Epileptic insanity	33	1	3.03
Imbecility	25	—	—
Constitutional inferiority	24	2	8.33
Delirium (various forms)	24	1	4.16
Habitual drunkards	14	—	—
Polyneuritic psychoses	7	1	14.28
Morphinism	5	—	—
Traumatic insanity	5	—	—
Hysterical insanity	5	—	—
Huntington's chorea	4	—	—
Total	1564	221	12.85

To let 12.85 per cent represent the number of times somatic ideas were found, is subject to some error. It represents accurately the number as far as the records show, but many of these patients have reached a stable state of deterioration and either the history of the onset is not accessible or they were residents of the hospital for years before accurate records were kept. In many of these patients, no doubt, somatic ideas were relatively as prominent as many other unrecorded delusions which must have existed in some form at the beginning of the psychosis.

MELANCHOLIA.—In the differential diagnosis of melancholia from other psychoses the question is often asked, "Has the patient any somatic ideas?" which thereby implies that the presence of these ideas establishes beyond any doubt the existence of melancholia. The question should rather be: "What is the nature of the somatic ideas; what part do they play; what relation are these ideas to the physical condition of the patient; how much affect is shown; and how does the patient react to these ideas?" With the extreme self-absorption and self-analysis, apprehension and worry over himself, we expect the patient suffering from melancholia to worry over his physical as well as mental welfare and this is what actually occurs. Ill health may underlie the initial anxiety and apprehension of the patient. Often the mental agitation begins insidiously. The patient's mind is in a state of unrest, the origin, cause and nature of which even he cannot determine. He worries more and more. Some cause must be found. Often

he remembers some trivial misdeed of his youth, dwells upon it and soon convinces himself that he committed a great sin and this is the cause of his mental state. Another worries over home and children, fears something will befall them, that he cannot provide food for them, denies himself proper food, becomes a physical wreck and rapidly loses ground. With the wasting of his body he is able to prove that some physical cause is at the base of his trouble. With his mind centered on himself, the smallest ache, or pain, or feeling of indisposition, is greatly exaggerated in his own mind. Symptoms referable to the alimentary tract are apt to be present. Under normal conditions the patient might diagnose his case as one of "indigestion" or "biliousness," but now it has a more serious aspect. Food distresses him; something must be wrong; he is constipated and sure that the food is never digested and does not reach the intestines; perhaps the food does not reach his stomach; perhaps it drops into a hollow space; perhaps the stomach is closed off, etc. He is soon convinced that one of these must be the cause, and though the patient's intellect may be unimpaired and his judgment in other matters good, he cannot be shaken in his belief that something fearful ails him. At the height of these delusions, when the mind is centered on the ego, ideas emanating from without are absent or in the background. I have in mind a patient who was anxious and depressed, attempted suicide by drinking wood alcohol, worried over it and refused almost all nourishment for months because the wood alcohol caused her throat to contract and burned out her stomach and bowels. She came to the hospital, retained this idea until her husband visited her. After he left, she was confident that he was retained in the hospital and was being tortured. She heard him call her and heard his tormentors killing him, etc. She made no more mention of her somatic ideas but suddenly developed a prominent hallucinosis. She began to eat better, improved physically and mentally. When her husband visited her again she was allowed to see him leave the hospital and saw him walk away. She was then convinced and made a speedy recovery. During her psychosis she showed extreme affect in reaction to these ideas but after her recovery laughed at the absurdity of them. The hallucinosis began abruptly as the somatic ideas disappeared. They did not occur together. The

only symptom common to both was the general worry, agitation, and apprehension, first for herself, later for her husband.

Less often delusions of a somatic nature develop rather suddenly. While worrying about himself the patient suddenly conceives the idea that there is a hole in his stomach, etc., and adheres to the idea with the same tenacity that is found in those patients in whom there was a gradual unfolding and elaboration of these ideas.

On the whole the prognosis in these cases is very favorable, especially where the ideas appear early, are in the foreground and not associated with hallucinations and prominent self-accusations; but they are dangerous, inasmuch as food refusal often accompanies these ideas and the debilitated condition soon leads to some fatal intercurrent disease. Where there is a gradual elaboration, the delusions are usually very stable, especially if the patients are weakened and run down, and the wasting of flesh proves to them the truth of the statement. In milder cases a generalization of the somatic ideas exists. A vague, indefinite depression and anxiety and some idea of ill health may exist.

Somatic ideas are sometimes the foremost symptom of melancholia. The sensations arise from within the body and in Wernicke's sense, are pure somatopsychoses. In the following instances there is a direct relation of the somatic ideas to previous physical states.

One patient with arteriosclerosis and mitral insufficiency, and suffering from hematuria, complained permanently with great affect that his heart did not beat; he had no pulse; worried over his kidneys; said he had syphilis and that his head was filled with bugs. Another patient became very much worried and depressed after an operation for cancer of the right breast. She attempted suicide because of an over-powering fear that she also had cancer of the stomach.

One patient was left very weak after a prolonged attack of influenza; a mild depression with a general hypochondriacal condition followed. Patent medicines were taken for stomach trouble, and finally firm-rooted ideas of poisoning and strong somatic ideas developed. Stomach and bowels gone; cannot swallow; food does no good, etc. In this case there was a slow

development of symptoms (2 years). Little affect was shown and a mild deterioration took place.

Another patient began to worry greatly over her condition after she had undergone an ovariotomy and ventral suspension. She felt as if there were snakes in her abdomen and that her stomach had fallen to pieces. She displayed a marked affect, but improved greatly.

A similar case followed an operation for hemorrhoids. The patient thought that her bowels and stomach were full of fleas and insects, and had prominent delusions of reference and poisoning. She became irritable and showed a permanent strong reaction.

A patient suffering from uterine fibroids merged from a depressed condition into a paranoic state with prominent sexual delusions, also olfactory and gustatory hallucinations. She believed herself to be pregnant and thought that the tumor was decaying and passing away in the stools, causing the foul odor. These ideas remained permanent with a reaction of scolding and threatening. After taking a tonic which she knew contained iron, another patient became depressed and agitated. She refused food because the iron closed up her throat and caused her to burst open. She showed some improvement.

During the course of an anxious depression, another patient began to worry about his hernia. He refused food because he was " all swelled up " and was " burning up inside." At the same time he feared his home and family were being burned up. In a very apprehensive patient who had prominent auditory hallucinations and continually wailed:" I believe there is something in my stomach; my food doesn't pass through; it's rotten," there was discovered at autopsy a cancer of the pylorus!

In some cases, however, pronounced physical diseases exist, which are totally ignored by the patient who evidently centers all his complaints about some previous pet idea. This reaction is more prominent in paranoic conditions. Thus a patient with overpowering ideas that her stomach was closed, her bowels never moved, her eyes were leaving, etc., never complained of the distressing cough, and dyspnœa of advanced pulmonary tuberculosis from which she was suffering.

Another patient disregarded completely the rapid emaciation

and presence of cancer of the liver and gall-bladder, which appeared to cause great suffering, but retained to the end the ideas that she could never die, that she was a spirit, full of poisons and animals enough to kill all nations, brain gone and head full of hot sand and ashes, etc.

A patient suffering from asthma complained continually of her stomach and bowels and knew she could never die, but said nothing of her actual sickness.

Occasionally we meet with patients who suffer from attacks of cardiac incompensation which are accompanied by a feeling of "Angst" and great agitation and depression. One patient has been at this hospital during several such attacks. The mental symptoms subsided each time with the improvement of the heart.

The story which we hear from patients in whom the evolution of the somatic ideas has been gradual, i. e., in whom there has been a general disturbance of the cœnæsthesia, without any tangible basis, is much the same in every patient, differing only in degree. The visceral organs are complained of most constantly but the ideas are usually extremely absurd. There is a strong affect shown and the ideas are tenaciously held.

The somatic ideas present in the depressed phases of cases of manic-depressive insanity, while relatively uncommon, are very apt to originate from some occurrence or illness. A patient who accidentally swallowed a needle, took salts. This was supposed to have rusted the needle and caused the blood to decay. One patient complained that her eyes had sunk deep into her head after she had taken gas for extraction of teeth. Another patient was constipated and took 6 cathartic pills. A firm belief remained that the bowels were ruptured and the legs were rotting off.

Ideas of a somatic nature were absent in all manic phases of manic-depressive insanity.

DEMENTIA PRÆCOX.—In dementia præcox there is a dissolution of mind, parallel with the body, but neither is recognized. Comparative weights of the brain and other organs show a regression from the normal. This fact, however, cannot be correlated with the somatic ideas. Cases of dementia præcox show a multiplicity of ideas which are usually adhered to with considerable affect and elaborated on a basis of delusions. Patients often have a somato-psychic feeling of being drawn out,

pulled out, muscles torn away, blood withdrawn, etc. These ideas often refer to beauty, face, or especially to the sexual organs. The affect is not so much in the form of worry, anxiety, depression, and hopelessness as of irritability, violence, and obscenity; not pleading for help or to be killed, but rather threatening if the supposed abuse is not stopped. They are not so apt to arise from actual physical disease but are often formed on the basis of delusions of poisoning through medicine, electricity or other power. The prognosis is not good. Eventually the delusion will cease, but dementia takes its place. The reaction is often quite marked in refusing food, but perhaps more from the idea of poisoning which is really at the root. As is often the case, the throat, stomach, and bowels first attract the patient's attention, or the idea may refer to the brain or sexual organs only, but the complaints vary. One thing to-day; another to-morrow. The absurdity never strikes the patient; attempts to reason are futile. He has no insight whatever. There is usually no foundation for his ideas and they are not within the bounds of possibilities. They can only in a vague way be said to be evidence or manifestations of a depressed condition, since they are associated more with anger than with sadness. The ideas originate usually when the disease is well-advanced and may be looked upon more as a sign of deterioration and an evidence of lack of judgment.

The scarcity of somatic ideas in old demented cases, following dementia præcox and other dementing psychoses, is very noticeable and natural. The patient has reached the stage of a vegetative existence. Nothing worries him, as he is too indifferent to think of his physical or mental condition. If somatic ideas were present in the beginning, they have faded with the other delusions. They are more persistent in psychoses where no deterioration is evident, where the intellect is unimpaired but where the judgment is faulty.

The somatic ideas in dementia præcox are often associated with a general alteration of the surroundings. Everything appears changed and the patient himself is different from formerly. He is an automaton, represents some other person, etc.

It is rare that a case of dementia præcox bases his ideas on some definite physical cause, or that such delusions are precipitated by some disease. If bodily disease co-exists with somatic

delusions, the latter rarely have a direct bearing on the former. In the following two cases a psychosis seems to have been precipitated by external causes, and the contents of the delusions stand in close relation to the cause. In one patient, prominent hallucinations of smell followed poisoning by illuminating gas. There was also a feeling of the brain shaking in the head. The patient developed prominent delusions of influence and persecution, became expansive and reacted to her ideas by threats, noise, and violence.

The other patient had had an operation on her eyes and immediately became very suspicious of the physicians and nurses whom she suspected of cutting her body to pieces, separating soul from body, taking out her eyes, etc. After some time there was complete change of personality; she was Christ and the entire surroundings were unnatural; those about her were spirits, etc. A marked deterioration ensued.

The following examples are perhaps less specific and possibly largely accidental. A general hypochondriacal condition supervened in a patient who was anæmic and debilitated, and a depressed affect was manifest in reaction thereto; however, her complaints were absurd and variable. One day her head kept moving and her throat was stopped up; the next day wind collected about her heart, then she had brain fever, and so on. Another patient became worried and depressed during her first pregnancy, thought she had the worst diseases imaginable and was covered with filth. A strong depressed affect was present and rapid deterioration followed.

Many cases of dementia præcox attribute their mental and physical weakness to masturbation, and most of them are familiar with cheap literature on the subject. The onset is usually with worry and depression, the "mind becomes weak" and the "system run down." In the statements of various patients the following evil effects were thought to have resulted from masturbation: "paralysis of the right side; weight in the stomach; heart feeble; system loose and flabby; pressure on the brain which scatters the thoughts; head bulges; stomach, intestines, and nervous system in bad condition; burning up inside; feeling as if brain was leaving; becoming tall and shrinking to nothing; blood not circulating

right; change of identity; breasts bitten and milked; feeling of pregnancy," etc.

The reaction to such statements is indifferent and apathetic. The sensations may be spoken of often with but little affect or depression, but are sometimes attributed to electrical and hypnotic influences and intellectual as well as emotional deterioration is rapid.

Menstrual disorders similarly affect the content of the delusions. The patient often fears she is pregnant and frequently experiences peculiar abuses at night.

The following statements of patients, in whom no physical cause for the somatic delusion can be demonstrated, show extreme absurdity and variability. Often they are recited with a smile, usually with indifference and at times when coupled with delusions, they are accompanied by threats and violence.

I. "Fear of bleeding to death when urinating; throat filled up; thoughts flow from wrists; thoughts leave with breath; drawn up and made to go through peculiar motions."

II. "Bones and organs destroyed; spine worked down into rectum where he feels it; life falling through rectum; fæces full of human beings." (Apparently firm belief in them but inadequate reaction.)

III. "Blood goes out into atmosphere; head knocked off; shoulders gone; patients steal his blood; pieces taken out of his neck. Blown-up feeling; filled with tacks and wires." (Advanced deterioration.)

IV. "Losing his senses and parts of his body; pieces of flesh fall to the floor; holes in abdomen and things fall out." (Somatic ideas disappeared and pronounced apathy and dementia ensued.)

V. "Becoming ugly; eyes not right; skin bad; hair on face." (Seclusive reaction at first, later dementia.)

Sensations of the following nature are attributed to electrical and other outside influences, and are accompanied by an aggressive threatening attitude.

"Muscles are torn from the back; tormented by pulling the arteries and drawing on the brain; peculiar forces affect tongue, eyes, ears, and character; muscles of neck, arms, and back are pulled; heart made to beat too fast; foam put into mouth; brain removed; body is used to bear children for others; machines

break up her body; bore holes in her head; people put through her; heart jumps up and down; insides taken out every night," etc.

The source of such delusions is difficult to explain. When they are stable they might be traced to some peculiar disturbance of the cœnæsthesia, but where they are changeable, they are probably random statements which are of no special consequence to the patient, but happen to follow in this particular channel and are evidence of a deteriorating process.

ALCOHOLIC PSYCHOSES.—Chronic alcoholics who have reached a paranoic stage and whose existence is miserable on account of feelings of persecution, influence, and auditory hallucinations, often feel that electricity, hypnotism, or some machine, is working on them. They are suspicious and soon have evolved a complex system of delusions. Many, though not expressing some concrete somatic idea, suffer greatly from electric currents, machines and other power, giving them shocks, burning them, etc. These often refer to the stomach and brain. Usually they are subjective sensations of the skin, which in some cases may be attributed to the prickling and numbness which accompany an alcoholic neuritis. A quite common origin of their hallucinations is from some machine, person, or little devils in the stomach, heart, lungs, brain, etc. These ideas are freely spoken of and complained of, and reacted to by threats and often violence. Frequently these feelings give rise to hallucinations with a religious coloring, that is, spirits, God and Christ are inside of them and speak through them. The alcoholic patients in whom somatic ideas are not apt to occur are those who have gone into a stable state of simple deterioration and who have escaped the more acute hallucinatory or paranoic conditions.

One patient in a chronic hallucinatory condition suffered much from gaseous eructations which he claimed "helped to start the voices along from the stomach." During an acute hallucinatory depression another patient complained that his bowels are all stopped up and "the devil's imp is in my stomach." His ideas resembled those of other depressed psychoses. In the following statements which represent the general type of somatic delusions in alcoholic subjects, we see a distinct difference. The ideas are closely interwoven with delusions of influence, electricity, hypno-

tism, and persecution and the reaction is one of fear, anger, threats, and violence.

"Enemies take the breath away; words are taken out of the mouth; kinetoscope works on the brain; machines take the strength away; body over-charged with electricity; rank smells come from the body; devils and spirits of hell in the stomach trying to cut out the heart; devils fly in and out of the mouth, ears, and eyes, and speak from within the body; body full of rats; head full of cockroaches; fire comes from the mouth," etc. These symptoms are most prominent in the acute hallucinatory conditions or in cases of protracted delirium tremens. In the chronic alcoholic psychoses, which have had a paranoic evolution, cutaneous paræsthesias of various forms, may remain which are interpreted as pains, currents, shocks, crawling of insects, pricking of needles, etc., resulting from hypnotism, electricity, etc.

GENERAL PARALYSIS.—In general paralysis the expression of somatic ideas differs markedly in form, depending on the mental condition; whether depressed or expansive, or whether in the beginning of the disease or at its height. In the beginning of general paralysis, especially the depressed states, there is a close analogy with the somatic ideas of melancholia or other depressing psychoses. They are apt to be very firm and stable and are often alluded to in a fragmentary manner after the patient has passed deep into dementia. They may be the dominating thought in the patient's mind and may have a real basis, such as an injury or disease; they may be on a delusional or hallucinatory basis, or mere temporary result of fancy. Considerable affect may be shown in worrying or in suicidal attempts. Frequently a demented and formerly expansive general paralytic may refer to wonderful machines in his heart or body, controlling everything, sun, moon, and stars, and he may often speak of it repeatedly but it is only a form of his feeling of grandeur. He does not show the least affect. He may frequently speak of being dead or dying, but these ideas are not fixed and might readily be kindled into transitory expressions of a somatic nature. Although in general paralysis there may be a very gradual onset with depression and hypochondriacal ideas, the actual expression of somatic ideas is comparatively rare. The depressed state may be steady and progressive and if the somatic ideas appear in the onset they

may be clung to for a long time. Gradually with dementia they drop out or perhaps later are spoken of from time to time with an affect of grandeur and expansiveness rather than the original depressed reaction.

In the following examples of somatic ideas in cases of general paralysis beginning with depression, we at once see a close resemblance to those of all other depressed affects.

The patient cannot breathe or speak; the throat is twisted; the bowels never move; stomach gone; throat plugged up; genitals wasted away; cannot sleep; hands and feet gone; saliva dried up; muscles stiff like wood; consumption of blood; shrinking away daily, etc. These delusions give no clew as to the further course of the disease, as some become rapidly demented and others go into an expansive stage.

Often the ideas have an absurd and grandiose coloring; thus a patient who became depressed after a shock in the beginning of the psychosis claimed that electricity caused the shock. He firmly believed that the electricity clutched his heart and that it was used as a switchboard; that his stomach was opened and closed by the influence of passing locomotives. In addition he claimed that there was a talking machine in his stomach from which voices emanated. (There had been excessive alcoholism.)

Another patient repeated gleefully that he was 7 feet tall and God had made him little; another had a wonderful machine in his heart which controlled sun, moon, and stars. Usually these ideas are alluded to in a fragmentary way in the course of other expansive utterances.

PARANOIC CONDITION.—The somatic ideas resemble those of the chronic alcoholic psychoses; however, the internal organs are seldom the seat of such feelings, but the sensations are said to be "put on" the patient, etc., by some external power or influence. These ideas are closely coupled with persecutory delusions and hallucinations which give an actual pain or sensation a fantastic interpretation. Frequently they are sexual in nature and are accompanied by hallucinations of taste and smell. The reaction to these delusions is violent and threatening. The patient is surly and suspicious and shows no depressed affect. The delusions are often colored by the environment. They are permanent, but the details are changed under varying conditions. New

sensations may arise and the old ones may be discarded, but as in the other delusions, the general system of the ideas is retained. Thus in a patient with well-marked persecutory delusions there developed rheumatism followed by an apoplectic attack. This was promptly referred to electrical influence. Every slight discomfort or illness in another patient was always said to be due to batteries, while at other times, no peculiar sensations could be elicited. One patient who had occasional attacks of cardiac incompensation explained the discomfort on the basis of electrical influence. The electricity was said to snap the veins in her head; it played on her heart and suffocated her; gas dried up her blood and the electricity caused salivation. In one patient there was a distinct bradycardia with attacks of syncope. At these times she complained of being crushed, put under ether, having her arteries drawn out, etc.

As a general rule these ideas vary greatly in the same individual and, if extensive, have a sexual coloring. This is exemplified in the following instance. The patient had prominent hallucinations of hearing, sight, touch, taste, and smell, and delusions of persecution and electrical influence. Her nose and mouth were burned every night by potash which was thrown into the room, heat runs through the back and stomach; she is tormented during the day by odors and pains; rank odors arise when people come near to her; she is made pregnant by wrong means and nightly the electricity causes distressing sexual feelings. These ideas are continually reacted to and the patient remains by herself much of the time.

The following tables show the frequency with which the sensations are referred to definite regions.

The viscera, bones, nerves, brain, etc., were mentioned as a seat of peculiar feelings 317 times:

Head and brain	58 times.	Blood	24 times.
Bowels	52 "	Lungs	12 "
Stomach	50 "	Kidneys	10 "
Viscera in general	35 "	Bones	8 "
Heart	35 "	Spine	2 "
Throat	30 "	Nerves	1 "

The organs of special sense and the muscular and cutaneous sensations were involved 161 times.

Mouth	37 times.	Ears	4 times.
Eyes	24 "	Muscular sensations	44 "
Nose	17 "	Cutaneous sensations	35 "

A definite disease was complained of 17 times.

Tumors	6 times.	Syphilis	2 times.
General weakness	4 "	Tuberculosis	1 "
Paralysis	4 "		

In 49 instances there was said to be an invasion of the body by animals, spirits, etc.

Animals	26 times.	Voices or people within the body	6 times.
Foreign bodies	11 "	Spirits	6 "

The frequency with which somatic delusions are referred to outside influences is shown in the fact that electricity, hypnotism, etc., were said to produce the sensations in 85 cases.

Electricity	30 times.	Machines	4 times.
Poisoning	24 "	Anæsthetics	4 "
Hypnotism and vague feelings of influence	22 "	Kinetoscope	1 "

In 45 cases sensations of a sexual nature were experienced.

It is rather surprising to find that definite diseases were complained of in a comparatively small number of cases, while isolated symptoms were in such preponderance. This is better understood when we see that a large per cent of the feelings were supposed to have originated from extraneous causes and were probably experienced only when these factors were at work. In other cases the general depression was looked upon as a disease of which the somatic feelings were a symptom or cause. The patients as a rule have lost the ability to analyze and criticise the obsessions and to associate the feelings properly, and abandon themselves completely to the prepossessing ideas. This predominent idea becomes fixed and cannot be dislodged from the consciousness,—a state which Ribot calls hypertrophy of attention.

It is not an uncommon experience to find unilateral hallucinations of hearing, affecting the diseased ear in cases of one-sided deafness in which the peripheral irritation undoubtedly excites the hallucinations. These hallucinations often disappear under local treatment; however, from everyday experience it is seen that such examples are in the minority and many hallucinations have undoubtedly a central origin. If we find no peripheral cause for hypochondriacal ideas, we may consider many of these as sensations likewise projected from the center.

Cases of actual hypochondria with feelings of double personality and peculiar muscular sensations are rare and may be based on a disturbance of the cœnæsthesia with delusions centering about the patient's body. The body is not altered by excitement or depression, but if it persists a new psychical and mental state is produced. The graver forms of somatic ideas gradually merge into double personality and *délire de negation.*

For a psychological analysis of hypochondriacal ideas, with especial reference to the disturbance of cœnæsthesia, the reader is referred to the article of G. Deny and P. Camus (11). They point out that the sensory perceptions have the organic sensations for an indispensable concomitant. A suppression or non-utilization by the consciousness of a group of these organic sensations (muscular, visceral, articular), resulting from a disturbance of association, is sufficient to bring about in our cœnæsthesia, a more or less profound perturbation which may go on to a single doubt, or to a complete negation of our bodily existence.

GENERAL SUMMARY.

Psychosis.	Per cent showing somatic ideas.	Relation of somatic ideas to physical condition.	Reaction of the patient to the somatic idea.
Melancholia	80.76%	Bodily disease often fundamental; onset less often insidious, rarely on delusional basis.	Sadness, depression, worry, anxiety, hopelessness, despair.
Paranoic condition	26.11%	Rare physical foundation; occasionally dependent on paræsthesias; usually variable and on delusional basis.	Suspicion, scolding, irritability, threatening and violent.
Dementia præcox	22.40%	Rare physical etiology; often insidious onset; usually on delusional basis, variable and absurd, often referable to masturbation.	If on delusional basis, anger, threats, violence and obscenity; less often worry and depression; usually reaction inadequate; indifferent, silly, at times apathetic and scolding.
Alcoholic psychoses (chiefly paranoic)	17.92%	Often dependent on gastric disturbances, neuritic disorders, paræsthesias, etc., usually explained on delusional basis.	Fear, scolding, threatening and violent.
General paralysis (with onset of depression)	9.42%	Resembles melancholia. Later may be grandiose and fragmentary.	At onset worry and depression. If grandiose, exaltation and euphoria.
Manic depressive insanity (depressed phases)		When present are apt to bear direct relation to some occurrence or physical disease.	Depression, sadness, worry, hopelessness.

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OBSERVATIONS ON GANSER'S SYMPTOM.

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In 1897, Ganser[1] described certain pathological phenomena which he considered peculiar to hysterical conditions and which have since been called *Ganser's Symptom.* Much discussion has been aroused, especially in Germany, both as to the interpretation of the symptom and as to the conditions in which it may be found. It is important, in the first place, to distinguish between *Ganser's Symptom* and *Ganser's Symptom-complex* (Dämmerzustand) or confusional state. Ganser's description of the symptom-complex was of a condition of hallucinatory confusion beginning acutely, developing rapidly, and quickly diminishing; it is accompanied by hysterical manifestations and is followed by amnesia for the attack; it is especially characterized by the symptom designated *Danebenreden,* a word for which there is no English equivalent, but which might be called *the symptom of approximate answers*—and which is the Ganser's symptom, properly speaking.

The characteristic of the symptom, according to Moeli[2] and Ganser, is that: *a simple question having been asked, the patient's answer, though incorrect, shows a somewhat near relation to the correct reply and to the question itself, a relation indicating that the sense of the question has been comprehended and, moreover, that the general circle of ideas to which the correct answer belongs has been aroused, even if the single correct idea has not been raised to conscious existence.* For example: *Question,* How many months are there in a year? *Answer,* Four. *Ques.* What day comes after Sunday? *Ans.* Tuesday. *Ques.* What is this? (table) *Ans.* A chair. When this type of answer follows a whole series of questions, the symptom is considered typical and is regarded by Ganser as an hysterical stigma.

According to Henneberg,[3] cases which correspond exactly to Ganser's description of the symptom-complex are very rare, and

he doubts if it is worth while to retain such a term as *the Ganser Confusional State;* it is the symptom of *Danebenreden* which has produced discussion, and it is this symptom to which there is reference in this paper. The intention is to present here, briefly, an outline of the various opinions given as to the significance of *Ganser's Sign,* adding thereto the interpretation of the answers given to questions put to 170 patients of different varieties at Butler Hospital.

Vorster[4] believes that *Danebenreden* is very frequently found in catatonia and occurs in about 21 per cent of cases, but from his description it is evident that he does not distinguish sharply between Ganser's symptom and the frequent senseless and inadequate answers of the catatonic which bear no relation to the question that has been asked, or are related to it only by some accidental word which appears both in question and answer.

Henneberg found the symptom not only in hysteria, stupor, and dreamy states, but in manic conditions, melancholia and dementia præcox. He says it may also be found in drunkenness and in normal persons when perplexed and also when they intentionally give foolish answers to foolish questions. It is occasionally found with hysterical or hypochondriacal patients who complain much of loss of memory and yet with whom, perhaps, it is difficult to determine the existence of actual mental weakness, in the sense of a permanent defect.

Other observers have noted the symptom in imbeciles and dements when anxious or excited, and have found that it occurs much more frequently in criminal classes than in the non-criminal. Manic cases often show *Danebenreden* as the result of voluntary effort to make jokes.

Nissl[5] has said that it is very frequent in catatonic negativism. Ganser replies to this by saying that it is a symptom of an *hysterical* condition *in* catatonia.

Raecke[6] thought it merely a stigma of hysteria.

Soukhamoff[7] believes it to be an hysterical stigma, but thinks it may also appear in dementia præcox. He considers it an associational disorder, a partial memory disarrangement.

In the series of 170 cases examined by the writer, 110 answered the questions correctly; 40 answered more than half correctly, and 17 answered more than half incorrectly for reasons that it is not

within the scope of this paper to analyze, as the typical Ganser's symptom was not exhibited.

Three cases showed *Danebenreden* and these cases were investigated further; an analysis may add something to the numerous interpretations already given.

Case I. Male; age 39; diagnosis: dementia præcox of hebephrenic type.

Ques.—How many months in a year?	*Ans.*—Forgotten.
Number of cents in a dollar?	50
What year is it?	1899.
How many days in the week?	6.
6 x 7?	44.
What is this coin (half dollar)?	$1.10.
Count to ten.	10, 2, 3, 5, 7, 9, 10.
Where are you?	With Ives (incorrect).
What is this (rubber fountain pen)?	Rubber pen.
What is this (sheet of paper)?	Ft. Adams.
How many fingers have I up (3)?	10.
How many eyes has a man?	4.
What is the day after Sunday?	Tuesday.

At a later examination, by another examiner, the patient was given a series of complicated and comprehensive mental tests. His effort throughout was good, comprehension excellent, and attention was held very closely. The average of the tests was far below normal but moderately good for a patient of the dementia type. At the end of this examination the patient was shown various objects and named them all correctly. Being asked to tell the year he answered, "Well, I'll tell you the same as I told the other man." After a pause says, "1905." (Well, is that the same you told the other man?) "No. I told him it was 1899." (How long have you been here?) "Over 6 years." (When did you come?) "August 8th, 1899." (Correct.) (How many days are there in a week?) "6." On being asked several times how many days there were in a week finally said, "If I answer straight I suppose there are 7." (What is the day after Sunday?) "Tuesday." (Is that the way you answered the other man?) "Yes." (Well, is it correct?) "Well, I suppose the day after Sunday is Monday." (Count to 10.) After much preliminary talk, holds up his finger and counts ten correctly. (Did you count correctly when you were asked to before?) "No,

I didn't." (Now, Mr. L., tell me why you counted so foolishly before when you can count correctly?) "I wasn't paying much attention." (What place is this?) "Butler Hospital for the Insane." (Is that the answer you gave when asked before?) "No, it isn't." (Will you answer a question frankly and honestly?) After a long pause, "Why, yes, I will." (Then, why did you answer the questions incorrectly before?) "Well, you know, if you put a man up among a lot of crazy people he is apt to get smart on the doctors." (And so you did it out of pure contrariness?) "Well, I had an idea that you were chasing a new man in on me, and I didn't think the questions amounted to anything."

The other two cases of dementia præcox which showed *Danebenreden* were examined a second time by another examiner and each, after tactful questioning, gave at last in almost identical words his reason for giving purposely incorrect answers, saying "the questions were foolish."

A summary of the analysis made of the three cases presenting Ganser's symptom leads the writer to the following conclusions: the symptom may be found in a variety of mental states, and might readily be put down as a symptom characteristic of this or that psychosis, but further and more thorough examination will probably reveal that the answer has been given, not because of an associational disorder, but for some simpler reason; for example, because the patient thinks that foolish questions deserve a foolish answer, as suggested by *Henneberg*, or thinking that the observer regards him as insane he will act in an insane manner. These answers are lazy; when the patient for one of various reasons desires to answer incorrectly, it is easier to give an answer more or less relevant to the question asked than to start a new thought process and reply from an entirely remote circle of ideas. It seems fair to say that in many cases too much importance has been attached to *Danebenreden* and that further analysis would show that it was not a necessarily significant symptom but a matter of suggestion, perversity, obstinacy, or carelessness. At least for the dementia præcox patient these conclusions probably hold good. It is possible that the symptoms may have another meaning with hystericals, but this seems improbable when we consider the notorious perversity of these patients. The desire to answer incorrectly combined with the wish to answer with greatest possi-

ble ease would seem to form a sufficient explanation for the larger part of the cases.

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Correspondence

LETTER FROM FRANCE.

In France everything is very much centralized, even science, so that usually a discovery is only accepted after it has been freely discussed in several scientific societies. Nevertheless, it seems that in psychiatry this does not hold to the same extent, evidently owing to the peculiar conditions existing here, namely, the dissemination of a small number of specialists in the various countries.

This year we find most interesting psychiatric subjects discussed in gatherings where such discussions are, as a rule, not looked for, namely: in the Academy of Medicine, in the Society of Surgery, and in the Obstetrical Society. However, before devoting our attention to these, it will be necessary to speak briefly of the Congress of Alienists and Neurologists at Pau and on the discussion which there took place upon the problem of dementia præcox. After having shown last year how the views of Kræpelin had spread in France, we will now show how these views have been received by this Congress.

The nosological value of dementia præcox.—At the meeting at which this was discussed, details, as well as the fundamental question of the problem, were considered; and, in contradistinction to what is usually found on such occasions, the debate went but little into the side tracts, but was kept chiefly to the question which may be thus formulated: Is the present conception of Kræpelin as given and defended by the referee, Dr. Deny, correct? To this question almost all of those who spoke gave a negative answer. Not that the syndromes of hebephrenia, catatonia, and dementia paranoides, as well as that of simple dementia were denied. These are facts of clinical observation, and their knowledge in France is by no means of recent date; they may be found in the works of Morel. Nor have these been forgotten. But, beyond giving a renewed description of these clinical facts, the German School has tried to formulate a conception of dementia præcox

which attempts nothing less than to include the greater part of all psychoses, and which, as one of the members expressed it, represents not an evolution, nor even a revolution, but a complete upheaval. This was rejected.

In the opinion of Dr. Régis it is not proven that the three states, that of catatonia, that of hebephrenia and that of dementia paranoides are related to such an extent that they represent merely varieties of the same disease. Dr. Masselon wished to separate for the present, at least, the deteriorating forms of amentia from dementia paranoides, and the deteriorations which occur in debiles on slight provocation, especially at puberty.

Dr. Vallon claimed that dementia præcox was not one disease, but that there are several conditions which would deserve such a name. Dr. Colin expressed his displeasure at the tendency to combine in one disease so many different states under the fallacious pretext that we are dealing with identical symptoms. And Professor Ballet declared that it did not seem to him proven that all types which have been thus united belonged to the same disease. Afterward Dr. Mecus offered a new conception which is also opposed to the unity of dementia præcox.

If we examine the conclusions of all these investigators, it is evident, as the president of the Congress, Professor Brissaud, said, that in this question each one had been guided by his own personal experience, and his own way of looking at such problems. The elder Dr. Parant finally attacked the whole conception of dementia præcox even more fundamentally, since he denied that the dementia was usually primary, but claimed that the active symptoms were not merely to be regarded as accessory manifestations, but as the essential primordial expression of the disease. In his opinion also, there does not exist a homogeneous group, but heterogeneous elements have been united, and the didactic descriptions do not tally with clinical observation.

Moreover, would not such an idea, which is purely hypothetical in analogy with general paralysis, take no account of the hereditary and constitutional nature of the cases included under the head of dementia præcox? Régis and Gilbert Ballet, from the standpoint of the clinic, and Klippel, from the standpoint of pathological anatomy, protested in this sense.

Is it, therefore, wise to claim that dementia præcox represents a clinical entity? No one has been able to establish a clear symptomatology, nor can the findings in pathological anatomy satisfy anyone. The French desire above all clearness: and hence we were justified in giving our approval to the opinions of Professor Brissaud who contended that at present we meet with too many unknown quantities to be able to decide definitely upon the problems of dementia præcox, and that these unknown quantities force us to an attitude of reserve.

On the nature of delirium tremens.—One of the most interesting psychiatric discussions of the year was one which has just taken place in the Surgical Society at the instigation of Dr. Picqué, a distinguished surgeon of the Paris hospitals, who is also a surgeon to the asylums of the Seine, and has, at St. Anne, one of the best surgical services in Europe. We have only too often reason to complain of the barriers which social and clinical necessities oppose to the mutual intercourse between hospitals for mental diseases and other medical institutions, not to be pleased over the happy initiative of a surgeon who discusses psychiatric matters before a surgical society a few weeks after he had been doing the same to an audience of obstetricians.[1]

In the communication of Dr. Picqué, which is entitled " Pathogenesis and treatment of delirium tremens," the generally accepted views on the subject are discussed. It is well known that according to Verneuil and his pupils, the chronic alcoholism produces in the organism a special predisposition to delirium, so that the slightest operation or traumatism is sufficient to cause a delirium to break out; this is what the surgeons have called traumatic or nervous delirium. To be sure, Verneuil has spoken of the importance of septic absorption, but he saw in this only an occasional, though necessary factor. Dr. Picqué modifies this conception, reversing the factors in the sense that he attributes to alcohol only a secondary rôle, and declares that the influence of the infection is by far the most important. He even goes so far as to claim that the infection is the sole source of the delirium which may arise in total abstainers, as well as in alcoholics. We shall

[1] Société d'Obstetrique de Paris, January, 1905, and Société de Chirurgie, May 3, 1905, *et seq.*

presently see what therapeutic consequences we may derive from this proposition.

Dr. Picqué claims that according to his studies of the question there does not exist any difference between the symptoms of the puerperal delirium and the septic surgical delirium, both of which besides resemble delirium tremens. We may say in this connection that a close relation between all toxic and infectious deliria has been well known to alienists, more especially through the work of Professor Régis. Nevertheless, we are pleased all the more if the study of the insane allows a surgeon to propagate these ideas among non-psychiatric readers. The puerperal cases, according to Picqué, present two degrees of the psychosis, namely: (1) A dream state, the "*délire onirique*" with painful hallucinations, especially of sight, from which the patient may be aroused momentarily, especially by forced questioning. (2) A more complete state of confusion. In these latter cases, who are rarely alcoholics, the septicæmia precedes the delirium and is the unmistakable cause. Now if one analyzes the observations of surgical septicæmia one finds very often the same course and the same clinical picture; and one is bound to arrive at the conclusion that alcoholism, though it be frequent, is nevertheless often a secondary cause, which plays an unmistakable, but not indispensable rôle; and this rôle, according to Picqué, is to be found in the fact that the alcoholism gives to the delirium a certain coloring, namely, the element of fear with its dangerous reactions of aggressiveness and defence, with suicide and homicide.

Certain objections may, of course, be raised against these ideas of Picqué, and Picqué himself guards against these objections. He is obliged to admit that there exist certain post-traumatic deliria without infection. He adduces in this connection another pathogenic element, namely, the mental degeneracy which predisposes to delirium, and which becomes the main etiological factor in place of the infection. The author does not deny the existence of an alcoholic delirium which may arise after traumatism, but he wishes to eliminate from the infectious delirium the too great share attributed to alcohol, and in truth he wishes to strike out the alcoholic delirium from nosology as it has dis-

appeared from the hospitals, together with infection at a time when, nevertheless, alcoholism was in the ascent.

This etiological part of Dr. Picqué's communication has raised a number of objections among his colleagues. Broca Lucas-Championnère and Regnier have stood up for the existence of alcoholic delirium, claiming that it exists in surgical cases with and without infection. In order to be just to Picqué it is necessary to add that he declined any desire to be as categorical as he was made out to be; he stated that he simply wished to deny the existence of a distinctive infectious delirium for which there was as little foundation as for the establishment of pneumonic delirium, which would be distinctive of pneumonia.

The treatment of delirium tremens.—There is however one point upon which his ideas have met with no opposition, but have, on the contrary, called forth the most flattering approbation; namely, his conclusions in regard to the therapeutic indications which he derives from his work. It is well known that at present the treatment in cases of delirium tremens, such as is used in the Paris hospitals, is simple. Aside from the preventive measures (intestinal antisepsis, drainage of abscesses) only one drug is used, namely, laudanum in doses of 60 drops in a litre of red wine, and if the attack is prolonged the patients are transferred to an asylum; a change which is, of course, attended with the usual loss of time and interruption in the treatment. Only Professor Quenu has for years practiced subcutaneous injections of artificial serum, to which is added strychnia in small doses.

The treatment of Dr. Picqué, differs entirely. In the first place he stops all alcohol regularly; a mode of procedure which has been well known to alienists and practiced by them with success. Secondly, since the infection is the prime cause, he uses the same treatment as in puerperal septicæmic deliria. This mode has given excellent results wherever he was able to apply it early enough; whereas when this was not possible the prognosis was much graver. Unfortunately, such a treatment clashes with the arrangements of our hospitals. It is certainly harmful to such patients to pass, at the height of their disease, out of the hands of the surgeon who declines to have anything to do with their mental condition, into the hands of an alienist who has no means of successfully treating their surgical ailments. The remedy in

this state of affairs would be simple enough. It would suffice to have a number of isolating rooms for delirious and agitated patients in general hospitals.[1]

Perhaps such an improvement will be made by the Board of Health of Paris in spite of the fact that this board is a slowly moving machine. At the Hôtel Dieu it is already realized so far as the delirious medical cases of Dr. Ballet are concerned, and likewise at Bordeaux, where the innovation is due to the initiative of Professor Régis. Moreover, the medical societies of the hospitals of Paris as well as the Congress of Alienists and Neurologists expressed their desire in this direction in 1901. But the new advance finds difficulties on the one hand in the administrative routine, on the other hand in the necessities of the individual safe-guard which has demanded special laws for the places where the insane are treated. Let us hope, nevertheless, that this progress will more and more spread for the benefit of the patients.

The treatment of general paralysis.—The problem of the relation between syphilis and general paralysis does not seem to cease occupying medical thought. This important question has passed through successive phases and the interest in it is so great that it is well worth while to state briefly its present situation.

Subsequent to the scientific battle over the question of etiology, those who adhered to the syphilitic origin of general paralysis (and they were in the majority) concluded that it was rational to apply the antisyphilitic treatment, especially since we had no better means of treating the disease. Experiments were made with tabes as well as with general paralysis, but, since the conclusions differed somewhat for the two diseases, we will confine ourselves to the results obtained in general paralysis. The most determined advocate of this treatment was Dr. Leredde. In several publications,[2] he emphasizes the danger of the term para-syphilis, and of the conclusions of Fournier, especially the latter's opinion regarding the inefficiency of anti-syphilitic treatment, since this may seriously interfere with its use; for Leredde claims that the various so-called para-syphilitic diseases, among them

[1] Régis, Les délirants des Hôpitaux. Presse médicale, September 12, 1903.

[2] Congrès de Médicine de Toulouse, April, 1902; Société de Dermatologie, June, 1903, etc.

general paralysis, are curable by mercurial treatment if the following two conditions are observed. First, the treatment must be applied early, and he claims that one has a right to speak of a cure if the disease be completely arrested, just as we speak of a cure when a gumma becomes cicatrized. Secondly, the treatment must be sufficiently energetic. He states that that which is important is the quantity of soluble mercury introduced and circulating in the organism in the unit of time. In order to give maximum doses he uses hypodermic injections either of calomel or of soluble salts in high doses.

At the same congress of Toulouse at which Leredde spoke, Professor Lemoine, the president of the congress, supported him. He stated that for years he had tried the various mercurial treatments without success until he had begun to use benzoate of mercury, with which he treated for a year and a half an early case of general paralysis with the result of bringing about a cure. Since then he had some similarly successful cases, while in others at least an amelioration took place. Well aware of the fact that a definite diagnosis in the beginning of general paralysis is very difficult, Lemoine affirmed to those who may doubt the diagnosis that there was no question in this regard. He admitted that he had more failures than successes with this treatment, but insisted that we should be pleased to possess a method of treatment which accomplishes that much in a disease like general paralysis. As to the mode of treatment, he has chosen the benzoate because, even in large doses, it rarely produces intoxication. 5 centigrams may be given during 40 days without serious consequences.[4]

On the same occasion also, Professor Cassaët reported some cases in which general paralysis was arrested by mercurial treatment, and even described two very interesting instances in which it seems not exaggerated to say that they were cured in spite of the advanced stage of the disease. Cassaët concludes that, although the mercurial treatment cannot completely heal the disease, if the lesions are so far advanced as to give rise to cortical destruction in places, it, nevertheless, is capable of arresting this terrible affection; and he is of the opinion that formerly the treatment had not been energetic enough.

[4] Revue Neurologique, 1902, No. 14.

In the discussion Professors Pitres and Gilbert Ballet, far from sharing in this enthusiasm, expressed considerable skepticism, admitting, however, that the negative results which they had thus far obtained may be due to the small doses of mercury which they had used; they spoke of their intention to make a trial with bigger ones. Everyone, however, agreed that the use of iodides was to be condemned since it was always followed by serious consequences.

Through these communications medical men became interested in these problems. Several articles appeared which confirmed the striking results reported at the Congress of Toulouse, among them may be mentioned that which Dr. L. Marchand read before the Medico-Psychological Society, October 27, 1902. Starting from the idea that in order to obtain the most direct influence upon the inflammatory lesions of the nervous system, the method of introducing the salt was important, he injected a solution of mercurial salts, together with iodide of potassium into the subarachnoid space by means of lumbar puncture. He met with no accidents, but found a certain amelioration in four out of five cases, after the second and third period of treatment. To be sure these improvements do not seem to have been very pronounced to judge from his descriptions. Then Dr. Devay[*] reported some observations which confirmed him in the opinion that general paralysis was of syphilitic origin. Among 42 cases treated he found improvement in 32. In a first group of three observations the somatic, but not the mental symptoms diminished; in a second group of five cases the somatic symptoms disappeared; whereas the dementia remained. Five cases of a third group showed marked improvement in the mental symptoms without any amelioration of the physical signs; while finally ten cases presented a complete disappearance of mental as well as physical symptoms, without relapse. His treatment consisted in the injection of calomel (0.1 per week), with iodides in large doses (from 14 to 20 grms. per day). Remissions, for one cannot speak of anything else but remissions, are therefore frequent with this treatment, and Devay concludes that the treatment in general paralysis should be the same as in syphilis.

[*] Lyon Médical, February, 1903.

These new ideas, which were published in medical journals and discussed in societies and before medical congresses, produced a considerable impression which was due partly to the reputation of their authors, and partly to the fact that they propagated their discoveries with considerable zeal. There were few places where these new therapeutic experiments were not tried, experiments the value of which would of course be very great if the good results reported could have been confirmed. Unfortunately this was not the case. The serious consequences which the administration of iodide of potassium produced were well known, and Professor Robin* had demonstrated that congestive attacks may follow, an opinion which has generally been admitted. But the treatment with mercury was also destined to see its day of defeat, namely, in the course of the French Congress of Medicine in Paris (October, 1904). Lannois and Balzar reported their results with injections of mercury. They claimed that, since certain syphilitic lesions only healed by cicatrix, even vigorous treatment could not give rise to a complete recovery in general paralysis; nevertheless, they advised such treatment against inflammatory exacerbations which often occur in the course of the disease. Upon this, Leredde again upheld his ideas on the ground that what he reported were positive facts which could not be overlooked, and he proposed at the same time a number of problems for experimental studies.

But above all Fournier opposed these ideas. He gave the results of his long experience, which were absolutely negative in the case of general paralysis, in spite of the use of large doses. Then Brissaud, while he admitted that with proper care there was no danger in giving to general paralytics even large doses of mercury (he gave as much as 0.13 centigr. per day), though he declared that it was necessary to stop when the resistance of the patient is reached, nevertheless was unable to record a single favorable result; and since the early diagnosis is difficult, he ventured to say that to him a cure of confirmed general paralysis was unknown, while to say that a cure was effected in an early case was not justified since the diagnosis was impossible. Therefore, it seemed that after this discussion the use of mercury in

*Société de Thérapeutique, February 11, 1903.

general paralysis was condemned, at least for the present, especially since with this treatment rapidly developing states of cachexia may be found, according to some neurologists, especially P. Marie.

In spite of this, the treatment of general paralysis again became the question of the day.

On the 28th February, 1905, Professor Fournier made a very important communication to the Academy of Medicine upon general paralysis *in syphilitics:* He claimed that while cerebral syphilis was of most frequent occurrence towards the third year, this syphilitic form of general paralysis was a late manifestation, unknown in the first two years, and developing more especially from the sixth to the tenth year, the greatest frequency being at about the tenth. He also claimed that it very rarely occurred in syphilitics who had been treated. Therefore, he concluded that there was at least room for a preventive treatment of general paralysis of the syphilitics, and that it was wise to modify the present modes for treating the candidates for general paralysis. He prescribes an energetic course during the first two years in order to break the disease. After that he gives the patient a rest for a year; again takes up the treatment for two years; this is followed by another rest, and finally towards the eighth year, a treatment as rigorous as the first is again resumed. Usually the treatment of two years suffices to produce an arrest of the disease, but the effects do not last; it is as if the drug had made a contract with the disease which requires to be renewed for fear of letting the important term pass by. This mode is also useful in those serious cases of syphilis which have a benign beginning and do not require any treatment at first, but manifest themselves, finally, by a regular thunder-clap.

Therefore, the only safe-guard against syphilitic general paralysis is a methodical, long-continued, mercurial treatment. Nevertheless, the neuropathic side must not be overlooked, and it is necessary to recommend certain hygienic measures to be followed, namely, care should be taken not to overdo in any way, to avoid sexual excesses, loss of sleep, alcoholic intoxication, and the inordinate use of tobacco; nor should hydrotherapy be omitted. This communication has provoked an important discussion in the academy. Professor Fournier was supported by those who adhered to the syphilitic origin of general paralysis, such as Pro-

fessor Raymond, who also lays much stress on heredity in that disease. He was opposed by Professor Joffroy and Lancereaux who did not agree that general paralysis had any definite relation to syphilis.

It is difficult to say how this question will develop in the future, nor is this the place to venture upon a discussion of the possibilities. It is interesting, however, to state that at the very time when it was thought that this whole problem was settled, the debate was re-opened, and re-opened by the very one who had shortly before given a decisive blow to the treatment then in vogue.

On crimes committed by insane patients in asylums.—The asylum physicians of France have been sadly touched by the grave accident with which Dr. Vallon, the chief physician of St. Anne in Paris, and well-known expert in legal medicine, has met. During one of his ward visits he has been the victim of an assault by one of his patients, a case of paranoia, who had already shot at his persecutors, and who was committed to St. Anne on the certificate of Dr. Vallon. This patient when he was unable to obtain his release swore that he would kill the chief of the service and premeditated the act for a long time. He stole a knife at the kitchen where he was employed, hid it carefully, and on the 4th of October of last year suddenly struck the doctor in the neck before he could be prevented from so doing. The instrument had a very dirty blade which entered for 1½ cm., as far as the spinal cord, only a short distance below the medulla oblongata. After a short lapse of consciousness a right hemiplegia, with hyperæsthesia of the same side, and anæsthesia of the opposite side, was found. According to Gilbert Ballet this was not due to hemisection of the cord, but to a slight involvement of Gowers' tract. The patient, who was cared for by Dr. Picqué, regained little by little all of his movements, yet, even to-day, months after the assault, he has not fully regained his health, as there still persists a certain weakness of the affected side. Nevertheless, he is very active, and, although he has not been able to resume his service at the hospital, he presides regularly at the Medico-Psychological Society, of which he has been made president for the year 1905. The grave assault committed upon Dr. Vallon is not the first crime committed in France by an insane person against a member

of an asylum staff. Dr. Hospital has given a collection of such cases in the *Annales Medico-Psychologiques* on the occasion of the historic death of von Gudden, the physician to the king of Bavaria, whom the latter drowned with himself. Without enumerating all the accidents to physicians in the different countries, among which America has its share, but confining ourselves to France, we recall the following cases since Pinel, who, though being the liberator of the insane, himself just escaped being the victim of such an act. Geoffroy, the physician to the asylum of Avignon, while stooping to examine the knee of an epileptic, was hit by the latter in the flank with a knife, from the effects of which he died shortly afterwards, in the year 1857. In 1897, Dufour, physician to the asylum of Grenoble, received two cuts on the head during his visit; he recovered. The act was premeditated. In 1881, Marchant, physician at Toulouse, admitted to his hospital an officer with delusions of persecution, who hid under his garments a revolver, and killed his physician a few days after entrance. During the subsequent year Bécoulet at Dôle was wounded in the face by a paranoiac by means of a sack filled with glass. Espian de Lamaëstre received a similar wound, also at the hand of a paranoiac.

Since the time of this summary of Dr. Hospital, the crimes committed by the insane in insane asylums have not stopped. At Mans a quiet patient who was allowed to work, struck Dr. Mordret twice with a knife in order to go before the court and obtain his release from the asylum. At Charenton Dr. Ritti received a violent stroke with the fist by a general paralytic who had intended to kill him. At Montpellier Professor Mairet was the victim of an attack by a patient who, armed with a pointed piece of wood, perforated his cheek. Dr. Toulouse in Villejuif, had a woman in his service with delusions of persecution, and hallucinations, who threw pepper in his eyes and struck him with a hammer. Fortunately, the injuries had no serious consequences. Dr. Charpentier at the Bicêtre was the victim of two attacks. The first was by an old patient in his wards who came to see him at his office, and fired a revolver at him, without, however, hitting him. The other by an alcoholic who had previously murdered his wife, and who, in order to revenge himself for a protracted period of restraint in the asylum, profited by the liberty he enjoyed in being allowed to

work, and tried to fracture the doctor's skull with a metal kilo weight. In Vaucluse Dr. Kéraval received an injury in the abdomen inflicted with a knife by an alcoholic epileptic; the injury, however, was only superficial, owing to the fortunate intervention of an attendant who warded off the blow. The man acted with premeditation. Finally, Dr. Devay at Lyons was stabbed in the abdomen by a paranoiac, who worked in the shops of the asylum. A severe hemorrhage and peritonitis followed, but he recovered after laparotomy.

In addition to these murders and attempts at murder which were committed upon physicians, there is a list, unfortunately still longer, of attempts upon the lives of inferior officers of the asylums; indeed we even have to add that patients themselves have been the victims of such acts. In our search, which is incomplete, we have found as many as seventeen grave assaults committed in the asylums, and under the most varied circumstances. Most often it was the case that the insane person finds himself alone with an attendant, with or without premeditation; and has time to kill him, or even to mutilate him; or the patient may have access to the attendant at night, owing to the fact that he sleeps in the same room, and may have time to strike him at his leisure. It is certainly rare that all precautions had been taken; it is also exceptional that the crimes were due to a sudden impulse, but most often there was a long preparation. No matter what was the form of psychosis from which the patient was suffering, almost all, paranoiacs, debiles, or even general paralytics, premeditated their act, found means of obtaining a weapon, by sharpening a blade, or making some sort of a dangerous instrument and finally executed their act after waiting for the proper moment.

These lamentable facts give rise to some reflections. After all, most of them could have been avoided, since the patients were able to take a long time in preparing their instruments. These acts are, moreover, almost always the deeds of chronic patients who are allowed to work and who are allowed considerable liberty, often without sufficient account having been taken of their delusions; they are patients for whose surveillance not only one person is responsible, but on the one hand the attendant who has charge of the ward, and on the other hand the man in charge of the workshops. Such an arrangement is bad, and it is one of the

points which makes difficult the arrangement found in different asylums of an administrative superintendent who is head of the shops, and a physician-in-chief who is head of the wards. Therefore, it is wise to keep a careful watch over these patients, especially when they have delusions. It was a case of this kind which was responsible for the dangerous accident to Dr. Vallon. Again, many accidents might have been avoided if attendants had not been left alone with patients; and, indeed, this should never happen. Certainly nurses should never sleep in the same room with patients, whatever phychosis these may have.

Another fact which the study of these cases brings home to us is, that, quite in contradistinction to the usual opinion, there are among these dangerous cases quite a number of general paralytics, e. g., the patient cited by Dr. Hospital, who complained of his detention at the asylum of Alençon, and who struck an attendant with a weapon prepared from a piece of iron, inflicting nine wounds; also the patient who tried to kill Dr. Ritti, and the one at Villejuif, who recently grasped an attendant by the throat; the latter died on the spot, evidently from inhibition. Dr. Pactet, in whose service the accident occurred, called the attention of the Medico-Psychological Society (March, 1904) to the fact that it was not justifiable to regard general paralytics as necessarily good-natured patients; and spoke in this connection of three murders committed by paralytics, which murders were due either to their inability to weigh the consequences of their acts, or to their marked irritability. After all it is well known that general paralytics are good-natured when things go their own way, but may become very violent when they think they are injured.

Dr. Vigouroux reported later, in July, 1904, similar observations to the same society. The first was a case of general paralysis, who, though he had marked delusions of grandeur, was able to convince his family of his sanity, and was also able to write a sensible letter to the editor of a newspaper, to get his comrades to sign petitions in order to protest against the treatment to which he was subjected, and made up a plot against the attendants and physicians, a plot which was about to become executed. The second case was also one of general paralysis, who premeditated his escape, but who was arrested at the moment when he had upon himself two knives, one with which to kill his wife, and the

other with which to kill himself. All these facts show that it may be dangerous to accept too lightly the usual opinion about these cases, and in general that vigilance is one of the first necessities to be observed by the physician in presence of his patients.

A. V. PARANT.

THE COMPLEXION OF THE JEWS.[1]

Dr. Maurice Fishberg, who has been studying the physical characters of the Jews for many years, has published the data as a memoir of the American Anthropological and Ethnological Societies (June, 1905). He agrees with the majority of anthropologists, if not all of them, that the present-day Jews do not represent a race of mankind at all, but are physicaly akin to the races among which they live. Eighty per cent of them live among the Alpine types of Central and Eastern Europe—a non-Aryan race originally from Asia. As all the Asiatic races are characterized by a broad head, dark complexion, straight hair and medium height, with the usual variations, it follows that the majority of the Jews are neither Aryan nor Semitic. By Aryan is meant the tall blond type with long head and wavy hair, and by Semite, the short brunettes with long head and wavy hair. The Aryan type, being confined to Northern Europe, has also been called the Baltic, Teutonic or Scandinavian, and its branches which have migrated have been called Celts, Slavs, Saxons, Romans, and Homeric Greeks.

The word Slav is used by Fishberg for the Asiatic or Alpine type which wandered into Europe in the millenniums just prior to the Christian era, and has learned to speak Slavic tongues. A few of these invaders, such as the Huns, still use Asiatic speech. The Semitic type is also called Mediterranean for it is mostly found around that sea. It is the link between the Negro and Aryan and indeed its southern branches are called negroid. The part of the world which can best be described as east of the Mediterranean sea, has been the theater of the conflicts of innum-

[1] Memoirs of the American Anthropological and Ethnological Societies. Materials for the Physical Anthropology of the Eastern European Jews. By Maurice Fishberg, Lancaster, Pa., 1905.

erable hordes of migrating Asiatics, Semites, and Aryans. The Asiatic types which have left modern descendants have here and there dropped their own speech and have learned Semitic tongues, so that they have long been called Semites though ethnically as far from that race as the Alpine is from the Aryan.

The Jewish religion has proselyted just as the Christian has, consequently a man's religion is no index at all as to his ethnic origin. In addition Jews, as well as Christians, have always married into the races among or near which they live. Hence anthropologists are almost unanimous in denying that there is any Jewish race at all, just as there is no Christian race. For these reasons they find that in North Africa, where nearly all the people are long-headed, the Jews are also long-headed, but in Eastern Europe where the heads are mostly broad or round, the Jews are of that type. Similarly the Jews are tall in places where the Gentiles are tall, and are short among the races of low stature, though they are almost invariably a little less in stature than the surrounding population, a phenomenon which is believed to be due to their poverty and the persecutions which have kept them confined to certain employments. The Jews are also city dwellers and that may be the main factor in causing a diminished stature, for city Gentile populations as a rule are shorter than the surrounding rural dwellers and it is no doubt due to the unnatural environment.

These two facts, that is, similarity of the Jews in head form and stature to the surrounding races, are sufficient to prove the theory that the Jews are derived in great part from the races where we find them. Head form persists throughout all changes in environment and it is certain that if the Jews were an ethnically pure race, we would not find such diversity among them in this one character. Yet when Fishberg took up the matter of pigmentation, he found that the Jews everywhere differed so markedly from the Gentile populations that he could find no relation between them whatever. Indeed it seemed that, at least as far as Eastern Europe is concerned, no matter what the indigenous population might present in the way of complexion, it did not appear to influence that of the Jews. He could therefore find no explanation for the origin of the blond types among them.

It is fairly certain that the ancient Jews were almost solidly

brunette although the Egyptians did picture types blonder than themselves. To be sure there were blond types nearby, such as the Amorites, who, like all mountaineers, were blonder and taller than the plains people, but there is no reason to believe that intermarriage with these has produced types which have persisted. Indeed the blond types are less numerous in the South than in the North. Again, the Amorites are believed to have been a long-headed race resembling the Aryan type, and this type is not represented among the Jews, for their blonds are apparently of shorter stature and broader headed than the Baltic man. Though it is quite evident that the Jews have not received a very marked increment from the Aryans, it is none the less true that they must have received some if the same rule applies to the Northern Jews as applies to all the others, and there are several anthropologists who have found tall Aryan types in increasing numbers the nearer to the Baltic the Jews were studied. Fishberg is inclined to believe that the tall Jews are apt to be brunette.

The blonds which are so easily accounted by racial intermixture, are really but a small percentage of the total number of Jews—not more than ten per cent anywhere, and as low as two per cent in Caucasia. They do not complicate the problem. The curious fact which Fishberg finds so puzzling, is that no matter what the Gentile complexion may be, the Jews show a remarkable sameness in being more brunette than their neighbors, and moreover the relative numbers of blonds, brunettes, and mixed types are so constant among the Jews that in a few places of Central Europe they seem to have a higher percentage of blonds than the Gentiles have. About 80 per cent of European Jews wherever found have dark hair and about 50 per cent dark eyes. Between these dark types and the few real blonds with blue eyes and blond hair, are the mixed types with gray eyes and brown hair.

The explanation of all these contradictory and puzzling facts as to pigmentation is probably to be found in Von Schmoedel's theory that pigments are evolved through natural selection to protect man from the dangerous short sun's rays—the blue, violet, and ultra violet. The writer's investigations have satisfied him that this theory is correct. The matter is too large to be entered into fully here but the details of the proof can be found in his

book on "The Effects of Tropical Light on White Men" (Rebman Co., 1123 Broadway, N. Y.). It is sufficient here to mention that the destructive effect of these rays to protoplasm, both animal and vegetable, is so great that life is not possible unless the cells are protected. Hence it is an invariable rule, that man has a pigmentary layer in his skin, whose opacity is in direct proportion to the intensity of the light to which he is exposed. It may make him black in the tropics or merely brown in the glare of the Arctic snow or that of the treeless plains, but he is blond only in the dark, rainy, cloudy northwest corner of Europe.

A map of mean annual cloudiness shows that the brunetteness of the people is also in direct proportion to the mean annual sunshine. In Southern Italy, with its cloudless skies of intense sunshine, blonds die out from the nervous and other diseases due to excessive light, so that the population is almost solidly brunette. This law applies also to Spain where the blonds are native only in the northern mountains, which furnish better conditions for blondness on account of their greater cloudiness. In the dark, cloudy, rainy country including Scandinavia and adjacent territories blonds do not suffer any inconvenience so that they flourish, but if they migrate far, extinction is the rule.

Now it is well known that in treeless, shadeless cities, the people are exposed to far more light than in the surrounding country, hence the blonds are the greatest sufferers and such families perish sooner or later. Their destruction is a well recognized phenomenon in American cities and has been going on in Europe for many centuries. It fully accounts for the fact that city dwellers are markedly more brunette than those in the surrounding rural districts. Since the Jews have been subjected to this selection for many centuries it is quite evident why the survivors should show such a high percentage of brunetteness.

This law does not imply that every blond who goes to a city must perish at once, or even in one or two generations. We are quite sure that the blond Homeric Greeks lasted many centuries before extinction finally resulted, but the brunette peasants survived eventually. Hence it is true that blond types introduced among the Jews of the city may last many generations, but that they tend to die out is shown by the present statistics. There is very little difference between the various cities of central and

eastern Europe as far as light is concerned, and as a consequence we should expect to find, as Fishberg reports, that the proportion of brunettes is practically the same in every city. Moreover, since the destruction of the blond types has no relation to the head shape, the survivors are found to be of every conceivable head form. Complexion in any part of the world has no relation to head shape whatever.

Fishberg's method of determining pigmentation can be severely criticized. The color of the hair is not a vital matter, though it is evident that black hair will protect the delicate cerebral cells far better than light hair. Yet light hair, if thick, is opaque enough for this purpose and suffices in all the tawny animals. Consequently types with brown or chestnut or even blond hair are able to survive if they have sufficient skin pigment. It is a fact that these northern blond types have but little skin pigment, but as we travel south we find that the light haired people have darker skins. I have made very careful examinations of light haired Italians, Spaniards, and others from southern Europe and have found that their skins are much more heavily pigmented than northern people with hair of the same color. It is not a result of tanning, because it affects the skin of the body which is never exposed to the sun. It is a congenital condition and is a matter to which practically no attention has been given by investigators.

We have piled up statistics as to hair color but they give us no idea of the opacity of the skin. The mistake is a very natural one because few people realize how opaque to actinic rays a swarthy skin really is. It is quite astonishing how such a skin protects one from sunburn and from X-ray burns. Dark brunettes apparently never suffer from X-ray unless it is applied inordinately. Hence Fishberg too has fallen into the old error and classes the Jews having yellowish or muddy skins as fair, whereas they are far from it. They are quite pigmented and perfectly suited to withstand the light of city streets, even though the hair be more or less blond. The statistics he gives are then evidently erroneous, for it is impossible to have 77 per cent of fair skins if there are 80 per cent or more with dark hair.

It is practically impossible to grade skin pigmentation except in a general way. A brunette may appear to be a very light per-

son when among swarthy Sardinians, but he would be considered very dark among Scandinavians. It is the contrast which counts. The brunettes in Scotland and England, who are called the "old black breed," are always "white men" when they go to India. Nevertheless it is possible to grade skins better than has been done. If the albino skin is zero as to pigmentation, and the black negro is ten, the blond Aryan would be one, and the swarthy Spaniard or Portuguese about four or five. The Jews whom Fishberg classes as fair would be about three or four in the scale or perfectly adjusted to the amount of light to which they are subjected, and they have evolved this by natural selection in all the cities irrespective of the complexions in the country people around them.

In the same way, the eye colors are very much misunderstood, for there is a vast difference between the blue Aryan eye and the grey eye. There is always some pigment in a blue eye and its amount gives the proper opacity to this curtain. Hence eyes commonly called blue are often very opaque. If this is taken into account there are very few light eyed Jews—far less than the thirty per cent reported. The blue eyes among the Spaniards and Italians are very dark and not at all like the Aryan blue. Similarly it will be found that the ancient Greek and Roman pictures rarely depict a brilliant blue eye, except as a northern type. By taking these corrections into account, we are quite justified in doubting that the Jews anywhere present a higher proportion of light types than the Gentile population, but that the reverse is the real fact in considering the total protection from light.

The red haired types among the Jews are just as inexplicable as among the Gentiles. There is not even a clew. Rufousness may be a variation of black or a variation of yellow, but as it is efficacious as a protection it will persist except in the tropics. It has existed among all races, blond and brunette, and we need not be surprised that it exists now as it did in the time of Esau.

This analysis of the complexion of the Jews therefore leaves but little doubt that they have evolved, through ordinary selection, a degree of pigmentation which is perfectly adjusted to the light of our cities where they now flourish and where they are bound to flourish for all time. They are so much more suited for city life than the Aryan immigrants that we are perfectly safe in predicting

that such types of brunettes will be the future city dwellers of America. Even now we can see that, except where they are too crowded and too poor, they are more vigorous and healthy than the Aryans, who become progressively feebler in every generation of city life, until they die out.

CHAS. E. WOODRUFF, *Major, Surgeon U. S. Army.*

Plattsburg, New York, September 2, 1905.

Obituary

DR. JOHN G. PARK.

John Gray Park, A. B., M. D., was born in Groton, Massachusetts, Jan. 3, 1838, the son of John G. and Maria (Thayer) Park. He graduated at Harvard University with the degree of A. B. in 1858. While pursuing the study of medicine at the Harvard Medical School in 1861 he became an interne at the Massachusetts General Hospital. In February, 1862, he was appointed an acting assistant surgeon in the U. S. Navy and served as such until November, 1865, when he was honorably discharged. He resumed his medical studies and received the degree of M. D. in 1866, soon afterwards opening an office in Worcester, Massachusetts. In 1871 he was appointed superintendent of the Worcester City Hospital then just opened. In October, 1872, he married Eliza B., daughter of Hon. A. F. Lawrence of Groton, and in the same month received an appointment as assistant superintendent of the Worcester Insane Hospital, where he remained until 1877, when he was transferred to the Worcester Insane Asylum, then converted into an institution for the chronic insane, and was made superintendent. Upon the retirement of Dr. B. D. Eastman, the superintendent of the Worcester Insane Hospital in 1879, he was appointed his successor and served the institution efficiently and continuously until his retirement in 1890. He spent the summer of 1881 in Europe and devoted special attention to English methods of caring for the insane. In his career as superintendent he had high ideals of professional duty and labored indefatigably to attain them. The circular observation wards which he built for suicidal patients attracted much attention and were regarded a new departure in the care of such patients. He also perfected the superb institution over which he had been placed in many ways and was ever a sagacious and prudent administrator. He was an excellent organizer and a good man of business, and under his management the Worcester Insane Hospital enjoyed a deserved prosperity. The failure of his health in 1890 led him to go to the Pacific Coast for a long vacation which unfortunately did not fully restore him, and his resignation followed. He then removed to his former home at

Groton, Massachusetts, where he continued to reside until his death.

In 1894 he was appointed by the Governor of Massachusetts one of the Commissioners to build the Medfield Insane Hospital and when the hospital was completed and opened he became one of the Board of Trustees, a position which he held during the remainder of his life. He was much interested in the work of this hospital and gave much time and thought to his public duties in connection with it.

His health gradually failed and he finally entered the Worcester City Hospital for treatment, where he died of cirrhosis of the liver, August 29, 1905. His wife died after a lingering and distressing illness several years ago. One son Lawrence Park, an architect of Boston, survives him.

Dr. Park was a man of fine physique and excellent presence. He was a genial companion, a steadfast friend, a public-spirited citizen and an upright man. His death will be keenly felt by many members of the Medico-Psychological Association.

STEPHEN LETT, M. D.

Dr. Stephen Lett, who died October 11, 1905, was a son of the Rev. Stephen Lett, LL. D., D D., of the county of Wicklow, Ireland, and later of Toronto and Collingwood. He was born at Callan, Kilkenny, Ireland, April 4, 1847, and was educated at Upper Canada College, Toronto. He became a member of the College of Physicians and Surgeons in 1870 and took his degrees at Toronto University.

For many years he filled the position of Assistant Medical Superintendent in London and Toronto Asylums, leaving Toronto January, 1884, to become Superintendent of the Homewood Sanatorium at Guelph.

In the fall of 1901 he developed general paresis which ended fatally in October of this year.

Dr. Lett was well known all through Canada as an alienist of many accomplishments and enjoyed a well deserved popularity. No doubt if he had remained in the Ontario service he would have become the head of one of the institutions, but as it was he did an excellent work by founding the first private asylum of any importance in the Province of Ontario. C. K. C.

Notes and Comment

CLOUDS AND HEALTH.—Major Charles E. Woodruff, Surgeon of the U. S. Army, whose name is familiar to the readers of the AMERICAN JOURNAL OF INSANITY by reason of his interesting and valuable contributions upon anthropology, has recently made the bold utterance that sunlight is not an unmixed blessing. Although sunlight is essential to life it may equally be destructive to life if the animal or vegetable tissue be exposed too long to it. In support of this view he cites the bactericidal effect of sunlight, the disappearance of blonds from the inhabitants of tropical or semi-tropical climates and the development of protective pigmentation among races where the sunlight is brightest, as for example the negro in the tropics and the Eskimo in cold regions where strong light is reflected from the snow. This pigmentation, he reasons, is absolutely necessary to enable the individual to adjust himself to his environment and individuals who do not develop it eventually die out as unsuited to this climate. He says:

"It so happens that the cloudiness of Europe, like that of Western America, increases toward the northwest. Consequently it is a rule that the complexions of the European races darken in proportion to the amount of sunshine. The blondest are in the northern, darkest, cloudiest and rainiest places. It stands to reason then that if a blond man migrates from this dark home to a light country, he is injured by the light and perishes in a few generations. This explains the disappearance of the blond Aryans who migrated in repeated waves to Southern Europe, and built up the ancient Greek and Roman civilizations.

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"This rule applies to America, and actual experience proves that the darker, rainier, and cooler a place is, that is, the more it resembles Southern Norway, the healthier are the blonds in that place. The original home of the blond is thus very far north, almost as far as Hudson's Bay, and our Southern States extend as far south as Nubia. No wonder then, that our South is becoming brunette, not by being sunburned, but because its blonds are gradually being killed off. No wonder, then, that these dark, rainy, cloudy, cool places of the Northwest are the most suitable for white men in the United States. It is a full and complete explanation of the exuberant health of the blonds of the northwest coast, with their brilliant complexions found nowhere else in the United States. All this is not proof that

we have any place as good as that in which blondness arose, but it is proof that the difference between our northwest coast and Southern Norway is not great enough to do very appreciable harm. It is a full explanation of that curious feeling of well being which comes on with cloudy weather, and of the stimulating and exhilarating effect of bright sunny days. If there are too many of these days, or the light is too strong, the stimulation becomes painful and exhausting. Disease results and the death rate rises.

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"The people of the northwest coast are not at all injured by their rains and clouds and lack of sunshine so many days of the year, but these conditions are the very ones, perhaps, which are giving this district an enviable reputation for health, comfort, and long living.

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"Instead of blaming the climate for its cloudiness, its people should be thankful that they are thus sheltered from the sun's rays which are so harmful in the rest of the United States. It required some centuries for the sunny skies of Greece to kill off the Homeric Aryans who invaded the peninsula about 1200 or 1500 B. C., and it will likewise take that length of time to accomplish the elimination of blonds in equally light parts of the central and southern parts of the United States. In the extreme northeast they will probably last as long as they do in equivalent climates of Central Europe, a matter of many centuries, but their eventual disappearance is as certain in one case as the other. Being so far in the future, the matter need not worry us in the least. The phenomenon will go on unnoticed as it has been going on unnoticed for 150 years in the southernmost of our States. It is simply the gradual elimination of blonds through greater susceptibility to disease in the lighter parts of the country and survival of the stronger and less injured brunettes. No one notices or even remembers the complexions of families which have disappeared, and are astonished to learn that they were blond as a rule. It is only after a long time that we discover the population to be more brunette; that is, it is descended from the darkest or fittest. We can confidently predict that the process will be exceedingly slow or even not occur at all in the dark parts of our northwest. The practical point for the present generation is to guard against a danger to health, and not unnecessarily expose ourselves to excessive amounts of light on the treeless, cloudless plains where the Indians were very dark, nor in any other part of the country, for it is all further south than the Scandinavian home of the blonds. Canada is better for white men than the United States, and the drift of migration is from Canada southward, but it is likely that the Puget Sound country and similar cool, rainy places resembling Southern Norway or cloudy Scotland, will be the permanent homes of blonds for all time.

"Let us end the sun worship which is now a mania with all learned people and acknowledge that too much of a good thing is always a bad thing."

If this be true it follows that the best remedy for neurasthenic conditions is to be found in a climate which does not furnish too much sunlight and consequently too much stimulation for the impaired nervous system. Such patients should not be sent to Colorado, New Mexico, or Southern California but rather to Oregon and Washington. It is hoped that after further study these views may be confirmed by other observers.

SECTION OF PSYCHOLOGICAL MEDICINE OF THE BRITISH MEDICAL ASSOCIATION.—The seventy-third annual meeting of the British Medical Association was held at Leicester, July 24-28, 1905. The section of Psychological Medicine was opened July 27, with an address by Dr. Urquhart on The Heredity of Insanity, following which Dr. A. T. Schofield read a paper on The Extension of Psychology in Medicine. The next day Dr. R. C. Stewart read a paper entitled Short Notes on Lunacy in Leicester, following which there was a discussion, opened by Dr. Hyslop, on Occupation and Environment as Causative Factors of Insanity. A paper by Dr. W. A. Potts on The Causes of Mental Defect in Children closed this day's session. On the twenty-eighth Dr. Robert Jones opened a discussion on Prognosis in Mental Diseases. A paper by Dr. L. Baugh on Confusional Insanity closed the meeting. The next meeting, in 1906, will be held at Toronto.

ANNUAL MEETING OF FRENCH ALIENISTS.—The fifteenth annual meeting of *Médecins aliénistes et neurologistes de France et des pays de langue française* was held at Rennes, August 1-8, 1905. It was opened with an address of welcome by M. Pinault, mayor of Rennes, to which Dr. Giraud, president of the congress, responded. A visit was then paid to the Palais de Justice. In the afternoon the principal address entitled *De l'Hypochondrie* was delivered by Pierre Roy. In the evening a reception was tendered the members of the congress and their wives by the city authorities.

The morning session of the second day was devoted to a number of papers, the chief discussion being on several papers upon *tics,* and on a paper by M. Granjux on *l'alienation mentale dans l'armée.* This question aroused such interest that it is to be continued at the next congress. In the afternoon an address

was made on *les névrites ascendantes* by M. Sicard. In the evening a banquet was held.

The third day was given over to an excursion to a neighboring asylum and to several other points of interest.

The morning session of the fourth day was occupied by twenty-two papers of considerable interest, and in the afternoon Dr. B. Pailhas made an address entitled *Balneation et hydrothérapie dans les maladies mentales,* after discussing which two papers were read and announcement was made that the next congress would be held August 1, 1906, at Lille, with addresses as follows: Psychiatry: *Etude cytologique, bacteriologique et experimentale du sang chez les aliénés,* by M. Dide. Neurology: Le cerveau senile, by H. Teri. Legal Medicine: *La responsabilité des hysteriques,* by M. Antheaume.

On the fifth day the congress visited the Asylum of Rennes where the morning session was held, seven papers being read. Lunch was served and a number of speeches were made. At the afternoon session sixteen papers were read.

No sessions were held on Sunday, and Monday, the last day of the congress, was given over to an excursion to *Asile de Pontorson.*

DEATH OF PROFESSOR LAEHR.—It is with great regret that we learn of the death of Prof. Heinrich Laehr on August seventeenth, in the eighty-sixth year of his age. Prof. Laehr has for a number of years been the chief editor of the Allgemeine Zeitschrift für Psychiatrie. He was also the founder and director of the Nervenheilanstalt Schweizerhof in Zehlendorf, near Berlin.

REJECTION OF RECRUITS WITH TENDENCY TO MENTAL AFFECTIONS.—The German authorities have recently issued more stringent regulations to prevent acceptance of new recruits with a tendency to mental affections, and to detect those already enrolled. In a number of garrisons permanent arrangements for post-graduate training in neurology and psychiatry are to be made. For several decades a course of psychiatry has been obligatory for the students in the military medical college in Berlin. The official notice also contains suggestions for detection of simulation.

MEETING OF SUPERINTENDENTS OF CANADIAN ASYLUMS.—At the invitation of Hon. W. J. Hanna, the Provincial Secretary, the Superintendents of the Canadian Asylums held a meeting in Toronto on September 20, for the purpose of discussing the needs of the provincial asylums. Papers were read by Dr. Campbell Meyers on the means of preventing insanity and on methods of care and treatment, and by Dr. W. N. Barnhardt on pathological work, but discussions upon the inspection of immigrants, the admission of the senile to asylums, pathological work in asylums, and the admission of insane to jails occupied the greater part of the time. This is the first meeting of the kind but is to be followed by others.

TENT TREATMENT FOR TUBERCULOUS INSANE IN ITALY.—Dr. Antonio Marro, physician-in-chief to the hospital for insane at Turin, has become greatly interested in the tent treatment of the tuberculous insane that has been so successfully carried out at the Manhattan State Hospital and intends introducing it in his own hospital. In order to influence public opinion he intends publishing the results which have already been reached and noted in the papers by Drs. Wright and Haviland, published in this JOURNAL. In all probability Dr. Marro would be glad to receive notes from others who have tried the tent treatment. His address is Via Cernaia, 40, Turin, Italy.

THE FUNCTIONAL CONCEPTIONS OF PATHOLOGY.—In conjunction with Dr. Cowles' insistence on the consideration of the functional aspect of mental disorders, it is of interest to note the growing realization of the importance of the physiological method in the study of diseases not only in psychiatry but also in so-called internal medicine. In the other addresses read before the Congress of Arts and Sciences, at St. Louis, last year, and in recent papers the value of the functional standpoint is magnified. In a pathological address at St. Louis, Hectoen, of Chicago, said: "That some of the followers of cellular pathology in the narrower, dogmatic sense, believed that the innermost secrets of disease could be reached by morphologic means, may now be regarded as an instance of the tendency man frequently shows to

approach his problems from the least accessible points."[1] From a pathological anatomist these are strong words, but not more strong than those by Dana in his address at the Congress:[2] "Clinical psychiatry is, in fact, only morbid psychology," and "Pathologic anatomy is a subject of more academic than practical interest to the psychiatrist. The burden of our work now should be away from morphology and more in physiologic lines." So long ago as 1892, Féré[3] insisted upon the physiological study of insanity: "Psychiatry ought to appropriate the physiological methods utilized by physicians. Departing from the metaphysical period of its evolution, it is in line to enter its positive experimental period. It is only in this way that it will obtain the same credit as other experimental sciences, and that it will cease to suffer from the scepticism of which it complains."

Meyer's article,[4] "A few Trends in Modern Psychiatry," emphasizes this standpoint: "There has been a growing confidence in the paramount importance of more accurate observation of the actual facts of insanity, the clinical evidence, and its analysis along the lines of the psychological experiment. . . ." "Kræpelin has been faithful to psychiatry as such and to its immediate correlate, experimental psychology, without feeling a desire to adorn his position with the easily obtained laurels in neuro-histology, and his faith has been amply rewarded." Ziehen is criticised because he has worked "with a constructive association-psychology, not with an essentially experimental attitude." Nissl's statement, "In almost all the functional psychoses it is possible to demonstrate anatomical findings in the cortex," is disposed of by Meyer as follows: "Yet, when we look for facts, it becomes plain enough that anatomy has so far furnished too few decisive facts, and that those hypotheses are the best which are based on evident and controllable facts in a field easily brought to a test of experience or experiment; and such experiments are more likely to be fruitful along functional lines than along simple anatomy, in most of the diseases with which we deal. What does an anatomical dogma

[1] Journ. Am. Med. Assn., XLIII, 1904, 1911-1917.
[2] American Medicine, IX, 1905, 97-103.
[3] La pathologie des émotions, p. 396.
[4] Psychological Bulletin, I, 1904, 217-240.

help?" A concluding sentence of Meyer's paper brings out most clearly his idea of the value of the functional aspect: "Psychology contributes essentially in the problem of symptomatic differentiation; and to some extent as the cardinal force of therapeutics."

It will not be amiss to quote Hoch's warning: "We must clearly appreciate that all these studies (i. e., studies of mental conditions in the insane and those following drug administration, etc.) are as yet in their infancy, and that no startling results can be expected so soon, yet no one familiar with the work can doubt that the road thus far covered is the right one."[1]

Finally, a quotation from an address delivered by one who has recently been called from his anatomical studies of the highest distinction to fill one of our most important chairs of medicine: "It is now clear to scientific medical men that a scientific therapy must be based ultimately upon physiology and that the cultivation and expansion of physiological science is essential if the development of a rational, physiological therapy is to be favored."[2]

S. I. F.

DELAY IN PUBLICATION OF OCTOBER NUMBER.—Some explanation is due our readers for the delay in the publication of this number of the JOURNAL.

It was caused by unexpected and apparently unavoidable delay in furnishing the editors the complete manuscript of one of the articles for the publication of which arrangements had been made for this number, and the complete copy of which was expected in time for such publication. In the meantime we are happy to say that the January number is nearly all in type and will, we anticipate, be issued promptly.

[1] Psychological Bulletin, I, 1904, p. 241.

[2] L. F. Barker: Method in Medicine, Bost. Med. and Surg. Journal, CLIII, 1905, 319-327.

Abstracts and Extracts

Le réflexe lumineux dans la paralysie générale. Par le Dr. Marandon de Montyel. Archives de Neurologie, Vol. XIX, p. 417, Juin, 1905.

The author gives the results of the examination of the pupillary reflex in 140 general paralytics from the onset of the disease until the death of the patient, the pupillary changes being closely followed. The conclusions which were reached were:

The pupils are abnormal in seventy-five per cent of the cases. In the great majority of cases both eyes are abnormal. Unilateral abnormality is very rare and is nearly three times as often transient as constant. More rarely yet the abnormalities are different in the two eyes and are never persistent. Considering the cases in the third stage the above results are verified and the law is proposed that some abnormality exists at some time or other in the course of the disease.

Exaggeration of the reflex was never observed as the sole change in the course of the disease—it was always preceded or followed by diminution. Abolition of the reflex is never established at the beginning of the disease but is always preceded by a diminution, the abnormality increasing from the first to the second stage and from the second to the third. Abnormal pupils exist in half of the cases from the beginning.

The unilateral abnormalities of the initial stage often persist to the intermediate, nevertheless they diminish in frequency and persistence with the progress of the disease to disappear completely at the third period. Unilateral abnormality is rarely met with, and in one-third of such cases, is but temporary. Still more rarely are the two irides abnormal in different ways, and then the difference is but temporary.

Finally it is noted that in the third period the eyes may rarely be normal, but more often the reflexes are diminished or abolished and are the same in the two eyes. C. R.

Some Remarks on the Nature and Classification of Insanity. By Theodore Diller, M. D. American Journal of the Medical Sciences, Vol. CXXX, p. 492, September, 1905.

The writer first points out that as mental symptoms are almost always accompanied by physical symptoms and since insanity is such a vague term and really means so very little, that it should not be used to designate a separate group of diseases, especially when a sharp distinction between sanity and insanity cannot be made in all cases showing mental symptoms.

It is thought that a more rational way would be to consider the physical and mental symptoms as units of one disease entity, since they are usually artificially divided. Short reference is also made here to the small amount of original investigation into the mental states in "so-called" physical disorders.

The idea outlined above is further elaborated by reference to special physical conditions with predominating mental symptoms, and it is also noted that Krafft-Ebing classes certain brain conditions as "physical diseases with psychic symptoms." The opinion is expressed that if the term "insanity" were abandoned and the points in the mental condition classed with the "physical" signs in the symptomatology of the condition a more determined effort would be made in the direction of etiology. Names which are in common use to express certain mental conditions might be used to specify a group of mental symptoms in connection with the physical condition. Finally, the establishment of psychopathic wards in general hospitals is earnestly advocated.

J. G. F.

La Pseudo-paralysie Générale Diabétique. Par JOSEPH INGEGNIEROS. Revue Neurologique, Vol. XIX, p. 709, 30 Juillet, 1905.

The author reviews the cases of general paralysis of diabetic origin which have been reported and gives the history of a case of his own. His conclusions are:

Diabetes produces both nervous and mental symptoms. All the somatic and psychic symptoms which constitute the syndrome of general paralysis have been singly observed and described as the result of diabetes.

A diabetic intoxication acting simultaneously on the different nervous centers, which can produce the symptoms of general paralysis, ought to manifest itself by that syndrome.

This diabetic general paralysis, by its clinical evolution, can manifest itself under different forms: 1. It can be accidental and disappear rapidly; 2. It can be fixed, but non-progressive, and curable by etiological treatment; 3. It can be progressive and incurable.

In the first instance one will have a "syndrome paralytique général diabétique accidentel"; in the second a "pseudo-paralysie générale diabétique"; in the third a "paralysie générale progressive diabétique."

The "pseudo-paralysie générale diabétique" is a clinical entity and should be added to the other forms of "pseudo-paralysie" (syphilitic, arthritic, alcoholic, and saturnine).

C. R.

Half-Yearly Summary

CALIFORNIA.—*Agnew State Hospital, Agnew.*—During the past year a cottage has been completed which accommodates 109 patients, the plumbing of the administration building and all of the old wards of the old building has been entirely replaced with new fixtures of the most sanitary pattern, a new oil gas plant for making gas from crude oil is giving considerable satisfaction, a vacuum heating plant is now being installed, and many other minor improvements have been made.

There is in contemplation for immediate construction new buildings better equipped for the treatment of the acute insane, an additional cottage, and a new kitchen.

Another assistant physician has been added to the staff and a woman physician is to be added at once.

—*Southern California State Hospital, Patton.*—The new central ward wing is expected to be ready for occupancy in November. This wing is a handsome building three stories high and cost $80,000. Furnishing will cost between $10,000 and $12,000 additional. In the basement there is a very complete laboratory for pathological and bacteriological investigation, and a room for the preparation and storage of gross pathological specimens. On the first floor are the offices of the superintendent, physicians, and business offices. On the second floor there are three suites of rooms for the assistant physicians, five large rooms for visitors, and the staff dining-room. On the third floor there is an operating room with anæsthetizing and convalescent rooms attached, all having tiled floors and walls and modern equipments. There are also on this floor a series of rooms which will accommodate about 60 quiet patients.

In October it is expected to open a detached cottage which will accommodate about 40 female patients of the convalescent class. The cost of this was about $20,000.

—*Mendocino State Hospital, Talmage.*—A tent colony for fifteen tuberculous patients has been in operation since November 10, 1904, and has been very successful. More recently tents to accommodate 45 cases of dementia have been put in operation and seem to be successful as the patients are more contented, their general health has improved, the untidy patients are more easily handled and many of them are brighter mentally than when on the ward. The cases treated include cases of dementia paralytica and of secondary dementia. The cost of these additions was about $3500, less than $60 per bed, while the cost of the ward buildings is from $500 to $800 per bed. During the wet season, the winter, there

were no colds nor cases of grip among the patients in the tents, but there were many cases on the wards and among the employes.

FLORIDA.—*Florida Hospital for the Insane, Chattahoochee.*—This is the only hospital for the treatment of insanity in the State and while primarily intended for the indigent under some circumstances pay patients are received. The number of the latter, however, forms but one per cent of the population which at the present time numbers nearly 800 patients.

There is now under construction a new hospital building which it is intended shall accommodate 225 colored male patients and their attendants. The steam-heating system is being thoroughly overhauled and repaired, the telephone system has been replaced by a more modern one, new and better sanitary appliances have been installed, and an artesian well is being bored. It is hoped that the supply of water from the latter will be sufficient to replace the creek water which has hitherto formed the basis of the water supply. Cistern water has been used for drinking purposes and it is hoped that this also can be discontinued. If the well supplies a sufficient quantity of water it is also proposed to build an ice and cold-storage plant.

The present staff, both executive and medical, was appointed last March at which time an assistant physician was appointed. It is hoped that a further increase may be made by the appointment of internes.

GEORGIA.—*Georgia State Sanitarium, Milledgeville.*—The laundry building has been enlarged by extending the building 40 feet, and by the addition of a drying room annex 24 by 71 feet. This gives an additional area of 4600 square feet of floor space which was much needed. The mechanical equipment has also been increased.

A brick wall 1756½ feet long and averaging 11 feet in height above ground has been built around the Whittle and Cabaniss buildings. The two wings of the latter building which remained unfinished at the time of the last report are now nearly completed, and the court-yards around both buildings have been graded.

The grounds around the Central Railroad station near the Green building have been graded and sodded.

Woven wire fencing has been placed in front of the Green and Cabaniss buildings as well as across the space between the fronts of the Whittle and Cabaniss buildings. The four front porches of the Green building have been enclosed with wire guards so that the patients may have access to them at all times.

Covered ways with brick floors have been built between the kitchen and the main dining-rooms, and the basement rooms in the old buildings under the ninth and eighteenth wards have been connected together by arches in the partition wall forming passage ways which enable the patients and nurses to go under cover to and from the kitchen and dining-rooms in wet weather.

A great deal of painting has been done and a number of minor improvements have been made.

ILLINOIS.—*Cook County Hospital for Insane, Dunning.*—The total number of patients at this institution is 1815, of whom 27 are quiet and helpless at the infirmary, the remainder being at the hospital for the insane. The annual cost per capita is $113.18, about 95 per cent of all patients being pauper cases. About 65 per cent are of foreign birth and 10 to 15 per cent are non-residents of the county. Alcoholism is directly responsible for over 20 per cent of all admissions.

During the past two years the following changes have taken place: Instead of four assistant physicians there are three senior physicians, each in charge of one of the following departments: 1. A hospital ward for insane consisting of 12 wards with a capacity for 300. 2. General wards for insane men. 3. General wards for insane women. There are three or four internes to assist the senior physicians, all appointments being made on civil service examinations. The congestion of patients has been relieved by building three new cottages accommodating 162, a pavilion building accommodating 140, by reconstructing a recently-built hospital for consumptives to accommodate 300, and by building a farm ward accommodating 50. A training school for nurses and attendants has been organized and put into operation, and with this the supervision of wards and patients has been made more effective, each ward being visited daily by a physician, superintendent of nurses, head nurse, and supervisor, seven or eight times, and at night at least three times. The number of attendants and nurses has also been increased from 125 to 160, and the various positions have been classified and are paid according to the skill required to fill them. The scale of wages for men and women alike is from $30 to $50 per month, aside from board, lodging, and laundry service. A pathological laboratory has been started, at present chief attention being paid to examination of blood, urine, stomach contents, etc. Regular daily staff meetings are held to discuss the features and treatment of all serious cases, and at a regular weekly meeting clinical cases are presented and studied. The entrance examination has been enlarged and systematized, and each patient's record is kept in a separate folder. A fire brigade has been organized, electric-alarm service installed, and the patients have been trained to leave their respective wards in case of a fire alarm. Facilities for the occupation and amusement of patients have been increased.

—*Illinois Northern Hospital for the Insane, Elgin.*—Among the improvements under construction or recently completed at this institution are five spiral fire escapes, a stand-pipe with pipe line to the river, a paint shop, two engines, and two 65 k. w. dynamos.

—*Illinois Asylum for the Incurable Insane, Peoria.*—Since the beginning of the year this hospital has maintained an average daily population of

1450, almost double that of the previous year. All gratings, bars, or obstruction of any kind has been removed from doors and windows and the ward doors are unlocked. The use of mechanical restraint has been abandoned and no hypnotics nor narcotics have been used for over a year.

A hospital accommodating seventy patients has been established and completely equipped. In this all of the nurses are women, whether on the male or female service, and are under a competent chief nurse who has had general hospital training.

The substitution of female for male attendants on the male wards has gone steadily forward until five hundred of the male patients are now cared for by female attendants. Only three wards are now in charge of male attendants and these will be replaced by women as soon as possible. At first only married women were chosen for duty on the male wards and no one was arbitrarily assigned, but volunteers have been so numerous that this rule is waived.

The color scheme of treatment has been adhered to throughout the ten cottages painted interiorly and the constant exposure to the blue and violet tones is being watched with interest.

The per capita cost of maintenance for the past year was $131.

—*Illinois Southern Hospital for the Insane, Anna.*—Fire on the afternoon of April 1, 1905, caused damage to this hospital amounting to $6000. The fire started in the power house and completely destroyed the roof, but by prompt work on the part of the employes it was prevented from spreading to the main buildings.

—*Illinois Western Hospital for the Insane, Watertown.*—Two improvements of especial importance have been made at this hospital. The first is the construction of two cottages for the isolation of tuberculous cases. About each side of these there are wide porches extending in all for a distance of 224 feet, sections of which will be screened off so that the patients may sleep out of doors. Between the two cottages there is a large house, the walls of which are made entirely of violet-colored glass. In this house it is proposed to liberate the fumes of the northern pine. A tent colony will also be provided in large yards which surround the cottages, there being space sufficient for six or eight tents in each.

The other improvement is the construction of an amusement hall, 100 by 300 feet, which is capable of seating 1200 people. All supporting work to the roof is by means of trusses so that there are no pillars or other obstructing objects. It is provided with four bowling alleys, billiard and pool tables, a swimming pool, and a platform 80 feet in width. This hall is intended to be used as a retreat for patients in rainy or cold weather, and entire wards may be entertained in it at one time. A schedule will be so arranged that the hall will be used on alternate days by the male and female patients, and after hours it will be used by the employes. It is not intended to abandon the older amusement hall which will be used for

lectures and other entertainments, but to use the new hall for band concerts, dances, basket ball, and the less formal amusements.

INDIANA.—*Southeastern Hospital for the Insane, Madison.*—The location of this new hospital has been made at this place. A tract of 393 acres, 346 feet above the Ohio River, has been accepted upon the following conditions: that good water be furnished in sufficient quantity, that the commission be given the privilege of selecting whatever portion of the land that it desires at a lower price than first asked, that the title be approved by the attorney-general, that streets leading to the hospital be improved, that the Pennsylvania Railroad construct switches to connect with the institution, and that the site shall be surrendered to the commission within a specified time.

IOWA.—*Cherokee State Hospital, Cherokee.*—The cottage for one hundred male patients which has been under construction for the past year is about ready for occupancy. This building is modern, both in construction and equipment, and is thoroughly fire-proof.

There are being constructed at the present time two soft-water cisterns, each with a capacity of 100,000 gallons, which are intended to supply the laundry and boilers only. Another deep well is being sunk which, with the two other wells already completed, will give the institution an ample supply of wholesome water for all purposes.

A great deal of grading has been done about the institution during the past six months and over 6000 feet of cement walk has been laid.

KANSAS.—*Parsons State Hospital for Epileptics, Parsons.*—The population of this hospital has continued to increase until it has now reached three hundred. It has been necessary to open an additional cottage within the past six months and another building will be opened during the winter or early spring. The capacity will then be four hundred.

The medical work has progressed in a very satisfactory manner. The medical staff has been recently increased by the appointment of a second assistant physician. A training school will be in operation during the winter and plans are now being made for the opening in October of schools for the patients. A fair working laboratory is now in operation.

Other improvements, either already under way or contemplated in the immediate future, are grading of lawns and planting of additional trees, the establishment of a dairy, and tiling a part of the farm and gardens.

—*Topeka State Hospital for the Insane, Topeka.*—There has recently been an outbreak of typhoid fever at this hospital, five employes and one patient being attacked. It is believed that the ice supply, which is from the Kansas River, is the source of the infection.

KENTUCKY.—*Western Kentucky Asylum for the Insane, Hopkinsville.*—During the present year two new wings have been added to this hospital,

consisting of eight wards, which increases the capacity to 1300. A new boiler house, two boilers, and a steel concrete chimney have also been completed and installed; the cost of same was $83,000. A new laundry building is now in course of construction, which will cost about $10,000.

LOUISIANA.—*Louisiana State Hospital for Insane, Alexandria.*—This institution is now nearly completed and will be ready for the reception of patients about November 1. It will accommodate approximately 500 patients.

—*Insane Asylum of the State of Louisiana, Jackson.*—The entire medical staff has recently changed, Dr. George A. B. Hays, the superintendent, becoming superintendent of the new hospital at Alexandria. On August 31 he was presented with a handsome silver loving cup by the employes of the institution. Upon the opening of the new hospital 200 patients will be transferred from this institution, reducing the population to 1250. At present there is a vacancy in the medical staff here.

MASSACHUSETTS.—*Foxborough State Hospital, Foxborough.*—The Massachusetts Hospital for Dipsomaniacs and Inebriates is now by legislative enactment the Foxborough State Hospital.

The field of work of the hospital has also been enlarged, and it now receives chronic insane men, transferred by the State Board of Insanity from the State hospitals. The two departments, that of the insane and inebriates, are kept entirely separate, each unit preserved intact.

The legislature appropriated $100,000 to erect new buildings and a heating, lighting, and power plant. Plans for the latter and one new building, to accommodate 100 chronic insane men, have been prepared and work will soon begin.

The number of patients at present is 201.

—*Massachusetts Hospital for Epileptics, Palmer.*—At this hospital a new building for one hundred male patients is nearly completed, making the total capacity of the institution six hundred. It is probable that a similar building for women will be undertaken soon. This completes the main group classification, and it is the purpose of the trustees in making further extensions to erect cottages similar to several now in use for family groups.

An addition to the staff has been made of one assistant, so that the total number on the medical staff is now five, the superintendent and four assistants.

Dr. John A. Furbish, a recent graduate of the Harvard Dental School, has served as dentist during part of the year, and a large amount of work has been done by him. Training school is also doing good work.

MICHIGAN.—*Upper Peninsula Hospital for the Insane, Newberry.*—Quite extensive improvements have been made during the past summer, and more are under way.

A new laundry building has been completed, additional laundry machinery is being installed and will soon be in operation. This will materially relieve the congestion which has been so marked in the old laundry building as a result of the rapid increase in population.

The inside painting of buildings has continued, and it is hoped to extend this work to include all buildings occupied by patients.

About four hundred feet of steam main from the boiler house through the tunnel to cottage mains has been installed to complete original plans, and a large amount of concrete walk has been constructed. The central heating plant is to be increased by the installation of two additional boilers of 166 horsepower each, and also by 115 feet of 10-inch steam main with appurtenances. Wood has been used for fuel since the hospital opened but coal is to be used hereafter, and the contract has been let for 3500 tons of coal, much of which has been already delivered.

Ground has been broken for, and construction will be pushed as rapidly as possible upon, a cottage and connecting cloister for men. This cottage will be 51 x 80 feet, two stories with basement, and will accommodate 50 patients.

—*Oak Grove Hospital, Flint.*—Plans have been prepared and the contract let for the building of an electric light and power house in connection with this hospital. It will be located at the rear of the central administration building. Improvements in the hydrotherapeutic equipment of the hospital are also in contemplation.

MISSOURI.—*State Hospital No. 1, Fulton.*—A new hospital building, accommodating about 100 patients, has been completed and is ready for use. For fire protection large plugs have been placed about the hospital buildings. The entire medical staff was changed in June.

—*State Hospital No. 2, St. Joseph.*—A new pavilion for women patients, called the Carey Building, was opened with appropriate ceremonies on September 6, 1905.

—*State Hospital No. 4, Farmington.*—There are under construction at this hospital at the present time a sewerage system, an additional dining hall, an addition to the laundry building, additional equipment to the power house, additional equipment to the electric power plant, an additional boiler room, and the furnishing of the infirmary. The following improvements are contemplated: an entertainment hall and employes' quarters, a water purifying plant, and a new cottage.

—*St. Louis Insane Asylum, St. Louis.*—There is in contemplation an immediate appropriation of $300,000 for the erection of two additions with connecting corridors, to relieve the present overcrowded condition of this hospital. Arrangements for a bond issue are now in progress, to be voted

upon by the people in November, for the relief of the city's elemosynary institutions, the aggregate amount of which will be at least $9,000,000, one million of which is to be spent in additional buildings for the care of the insane poor of this city.

—*Missouri Colony for Feeble-Minded and Epileptic, Marshall.*—The Missouri Colony for Feeble-Minded and Epileptic has 327 patients; 149 female, 152 male, and 26 on parole. The institution consists at present of Cottage A, day hall and two dormitories, 59 patients; Cottage B, day hall and two dormitories, 55 patients; Cottage C, day hall and two dormitories, 38 patients; Cottage D, day hall and two dormitories, 47 patients; Cottage E, day hall and two dormitories, 61 patients; Cottage F, day hall, two dormitories, 41 patients; Cottage G, basement, first, second, and third floors for school purposes; dining-room, to accommodate five hundred patients; kitchen; laundry; and power house. Contracts let: for addition to officers' cottage, $1500; new laundry, $6000; addition to power plant, $4000; workshop and machinery hall, $1000; completion of corridors, $3000; furnishing Cottages F and G, recently opened, $5000; addition to dairy barn, $1000; additional equipment of power plant, $1000; equipment of laundry, $1500; sewers, $1000; grading, walks, and driveways, $1000; repairs, $1000; building for school purposes, contract not let yet, $3400.

Dr. William L. Whittington has succeeded Dr. L. M. Thompson as superintendent.

The third year of school opened September 18. Number of teachers employed, four; all female; number of attendants, nurses, and employes, 40; value of plant, including grounds, buildings, and equipments, $500,000; total amount appropriated by last legislature, for buildings and support, including salaries of officers, repairs, improvements, and current expenses, $183,000. Charge for patients per capita, per annum, for maintenance, including school, $150.

NEW HAMPSHIRE.—*New Hampshire State Hospital, Concord.*—The legislature for 1905 appropriated $200,000 for erecting a hospital building, a store house building, an employes' cottage, and for the construction of iron fire-proof stairways in the place of the old wooden stairways which have existed since the foundation of the hospital. This work has been progressing. The most important feature of the work is the hospital building which is to be entirely detached from the main building though connected with the nurses' home by a subway. This structure is intended to serve as an admission building, all new cases being received here, examined, and located according to their requirements. A physician will reside in the building. There will also be provisions for the care and nursing of the feeble and sick demented insane as well as those suffering from the acute psychoses. It is expected that the building will be covered in by late fall and will be ready for occupation September, 1906.

NEW YORK.—*Binghamton State Hospital, Binghamton.*—The pavilion, known as Edgewood, for tuberculous patients recently erected on the hillside facing the south at this hospital is now occupied by one hundred patients. The building is advantageously situated with a protecting forest behind it on the north and to some extent on the west and east, and has a fine outlook over the valley of the Susquehanna River on the south. This pavilion has been constructed on the general lines laid down in Arthur Latham's prize essay and seems to be well adapted for the purpose it serves. Many windows admit the maximum amount of light, corners and angles are avoided as far as possible, and the furnishings throughout are calculated to avoid the collection of dust. The building has been occupied since June 1, 1905, and the patients are doing exceedingly well. The new brick residence for the superintendent has been completed and is now occupied. The apartments formerly occupied by him are now being converted to the use of patients with an addition for dining-room, lavatory, linen and bath rooms, and with the use of the old chapel for a dormitory, accommodations will be provided for about eighty patients. During the past summer a complete fire-alarm system has been installed, with eighteen stations for sending in alarms and a number of gongs in prominent locations where employes are likely to hear them. An automatic steam whistle is part of the system so that a general alarm is sounded as soon as a box is pulled. A complete hydrotherapeutic apparatus has recently been installed and is now in practical use. The erection of a new building for the chronic insane has been commenced. This building will be of brick and will provide accommodations for 440 patients. It will stand on high ground facing the south and will afford fine outlooks from all of its wards. An appropriation was made by the legislature last winter for the purchase of the "Park Farm," a property consisting of 180 acres adjoining the State hospital farm on the easterly side. This farm has been rented during the past four years and is regarded as a very desirable acquisition.

—*Brigham Hall, Canandaigua.*—On Wednesday, October 4, the managers of Brigham Hall celebrated the fiftieth anniversary of the founding of the institution.

A large number of the residents of Canandaigua and vicinity, and many others from a distance, including several members of the medical profession, assembled, in acceptance of an invitation from the authorities of the hospital, at Brigham Hall, where they were received by Dr. Burrell, the medical chief.

The principal feature of the formal exercises was an address by Dr. John B. Chapin, of the Pennsylvania Hospital for the Insane, Philadelphia, who was associated with the late Dr. George Cook in establishing, and for sometime in conducting, the institution.

Dr. Chapin's address is too long to reproduce in full, but the following extracts will, we are sure, prove of interest:

"During the summer of 1855, Dr. George Cook and his brother, Robert

Cook, reached the village of Canandaigua in the course of a tour of several villages in Western New York in search of a suitable site on which to locate and build a hospital for the care and treatment of the insane of the private class.

"What Canandaigua, the 'Chosen Ground,' or the 'Sleeping Beauty,' was to the Seneca Indian, so it has been the chosen ground of the white man who followed him, and here on this chosen spot and site you are assembled to-day to commemorate the fiftieth anniversary of the establishment of Brigham Hall. On this jubilee occasion it is my agreeable privilege, on behalf of the managers, to welcome you to this chosen spot; to thank you for the honor of your presence; to invite you to inspect the property and the arrangements for the comfortable care of our patients, and to present most briefly an epitome of some of the operations of this hospital. There have been the realization of expectations; the patient working out and completion of plans; professional results; something done to heal and to make more tolerable some of the infirmities incident to human existence, which we submit in the confident belief that they will receive your approval and furnish reasons for doing what has been accomplished during a period of fifty years.

"In the fall of 1854, Dr. George Cook returned to the State hospital at Utica after a sojourn of one year in England, Scotland, and France, spent in the observation of public and private asylums. He had been in the service of the Utica State Hospital under Dr. Brigham for a period of six years. The object of the journey abroad was to study the plans and administration of the foremost institutions of other lands. For a period of one year we were associated together at Utica, and there came to be formed between us strong personal relations such as come from close contact and the performance of similar duties, which were destined to be resumed afterwards in closer association, such as men form with mutual confidence in each other when they join their hopes and fortunes in an undertaking. To the majority here present probably Dr. Cook was unknown personally, but on an occasion like this there may be some who will unite to do honor to his memory, to recall in these days his uncompromising integrity, his devotion to his profession, and to hold him in remembrance for his fidelity to all civic and private duties as they came to him, and for the example of his Christian character. To those who did not know Dr. Cook personally, it may be stated that what you may observe to-day is due rather to his foresight and wise judgment than to that of any other person.

"In the year 1855, the State Hospital at Utica had been in operation twelve years and accommodated 444 patients received from the State at large. Bloomingdale Asylum (1821), a department of the New York Hospital, and Sanford Hall (1845), together having about two hundred and sixteen beds, constituted the entire hospital provision for the insane of the private class.

"No provision then existed for legalizing the private hospital care of the

insane, which, although lacking, was yet inadequate and much desired. During the summer of 1855, after conferences with the board of managers of the State Lunatic Asylum and their legal advisers, and with their approval and commendation, Dr. Cook, Robert D. Cook, and William G. Wayne formed an association, and purchased this site on which the building now used as a residence for officers and administrative purposes was standing, but then in an unfinished condition, surrounded by grounds in a very primitive state. The first patient was received October 3, 1855. There were then, as now, the elevated plateau overlooking the whole extent of the village; a view of Fort Hill toward the east; the gentle slope toward Canandaigua Lake and the Gorham hills beyond; the incomparable vista and setting of the lake itself limited on the extreme southwest by the Genundewah mountain, intimately associated with the legend of the great serpent and the origin of the Seneca Indians, known also as the Great Hill people.

"Recognizing the importance and even the necessity of receiving from the State Legislature such authority for the admission and detention of patients as it might be pleased to confer, an act of incorporation was prepared, approved, and introduced by the Hon. Mr. Boardman, of Tompkins County. It became a law in 1859. In the use of the word "hospital" in the charter, we have the first official recognition in this State or in many of the States, of the distinctly medical character of mental disorders, and the work to be carried on for the care and treatment of the insane as distinguished from places of detention only. Of the four persons, Dr. George Cook, Robert D. Cook, William G. Wayne, and Dr. John B. Chapin, who became associated under this act of incorporation, one still survives, but as reasonable permanence was one of the principal objects originally contemplated, the hospital has continued under the same judicious management by their successors that characterized the policy of the founders. To commemorate the name of Amariah Brigham, the first medical superintendent and organizer of the State Lunatic Asylum—the foremost alienist of his day—this hospital bears his name.

"The medical service and administration from 1855 to May, 1860, was performed by Dr. George Cook. From May, 1860, the medical duties and the administration were performed jointly by Dr. Cook and Dr. Chapin, until October, 1869, when Dr. Chapin removed to take medical charge of the Willard Asylum. After the untimely death of Dr. Cook in June, 1876, Dr. D. R. Burrell, formerly of Bloomingdale Asylum, was appointed resident physician, and continues in charge of the hospital, administering its affairs to our entire satisfaction. All who have been connected with Brigham Hall had experience and training in the care of the insane in large hospitals before their appointment here.

"From the beginning, October 3, 1855, to the 1st of October, 1905, there have been admitted to Brigham Hall 2097 patients. Of this number there have been discharged: Recovered, 548; improved, 692;unimproved, 425; died, 219; cases of alcoholism or the drug habit, 158.

"It was an experience of those engaged in State hospital work in the fifties, as well as earlier, to become familiar with the total lack of proper care and provision for the insane. The wretchedness of the poor and friendless persons confined in the county almshouses of that day was intensified by the squalor of their environments, and the lack of sympathy that characterized their care. It might seem strange and even impossible to some at this day, yet such is the fact, that not less than two hundred and fifty insane persons were confined with irons and chains in the poor-houses of New York State—a number greater than Pinel liberated from chains and irons in the hospitals of Paris in 1795—an event which marked the beginning of the modern humane system of treatment of the insane in France.

"It is part of the unwritten history of this subject and may be published here, that the managers of Brigham Hall made a proposition to the Boards of Supervisors of this judicial district to erect buildings for the care and treatment of all the insane in the counties comprising the district, without the aid of any public funds, subject to the approval of the Legislature, with the single provision that the insane of the district should be supported at the same weekly charge then made by the State Lunatic Asylum at Utica. This proposition was acted upon favorably, or received with marked favor, but was not pressed, and was finally abandoned when it was proposed that the State should control the management, although any State supervision or inspection would have been readily accepted. For the purposes of the proposed enlargement of our work, and to establish a colony, an option on a site of 250 acres of land near by was obtained. Undoubtedly to the advantage of all interests concerned, it has been well that the scheme ended, in the light of what has been accomplished in succeeding years, by the creation of a comprehensive system of State care of the insane. The study of plans and the details of organization of such a scheme to which your attention has been directed was nevertheless to bear some fruit, and was not wholly in vain. Although these plans and details had been considered and settled long before the law creating the Willard State Hospital was passed or even conceived, yet in the erection of that great plant they were in part reproduced. They have had a far-reaching influence upon plans of construction in this and other States, and rendered possible the success of the splendid State care system of your State and the total abandonment of the poor-house system of care that existed in former days. The organic act of the Willard State Hospital in the handwriting of Dr. Cook, with interlineations by the late Charles J. Folger, a Senator from this district, is a valued possession still in existence.

"Here on this 'chosen spot,' where we have been the recipients of the generous sympathy and co-operation of this community, we trust we have not wrought in vain. The work done here has not been for ourselves alone. We are, I trust, duly thankful that we have lived and participated even in an humble degree in the marvelous advances made in the care of the insane during the last half of the century that has just closed; for the

number who have been here restored to the possession of their reason; that the lives of others have been rendered more tolerable; for any relief of human suffering that has come through the instrumentality of this hospital. May the blessing of God continue to attend the undertaking during the years that remain."

—*Buffalo State Hospital, Buffalo.*—The new chapel, superintendent's residence, and staff residence, which have been building for the past year, are completed and are occupied. A home for 100 male nurses and employes is about completed and will soon be occupied.

—*Craig Colony for Epileptics, Sonyea.*—The census of the Craig Colony for Epileptics has reached 1050.

Bids were opened on September 5 last for six new cottages to accommodate 200 additional patients. There are now 71 buildings on the premises, 30 of which are occupied by patients.

Three additional medical internes have recently been employed. This gives a staff of 9 physicians for 1050 patients.

The new wing to the Peterson Hospital has been opened. It contains a specially constructed medical library, a room for medical records, and a complete plant for the water treatment of disease.

The last legislature gave the colony the right to make autopsies on the bodies of indigent patients dying at the colony. Following is a copy of this law: (The superintendent shall) "Have power, subject to the supervision and control of the board of managers, in case of the death of any patient at such institution who shall have been maintained therein wholly at public expense, to make or cause to be made at the said Craig Colony by a member or members of its medical staff an autopsy on the body of such patient, provided that such autopsy be made not later than twelve hours after the death of such patient and that it be confined exclusively to the brain and made in such manner as will cause the least possibly mutilation, and provided also that the said Craig Colony shall print conspicuously upon all application blanks used in admitting patients to the institution the fact that the officers of said colony have the above stated powers in relation to the making of autopsies.

"This act shall take effect immediately."

It is felt that the foregoing law will help in the elucidation of problems underlying the etiology of epilepsy.

—*Dannemora State Hospital, Dannemora.*—There is now in course of construction a new two-story building. This building is of red granite, is 114 feet long by 57 feet wide, and is a very desirable addition to the group of buildings now forming the institution. The lower floor of this building is to be used as a dining-room for patients and the upper floor as a chapel and amusement hall.

A new operating room is nearly completed, the fittings of which are

well appointed and the hospital staff is now prepared to perform whatever surgical service is needed by the patients.

The hospital grounds have been improved to a great extent by grading and sodding.

—*Manhattan State Hospital, Ward's Island, New York City.*—By legislative action during the last session, Manhattan State Hospital, East, and Manhattan State Hospital, West, were consolidated after June 1, 1905. This act restored the board of managers and abolished the board of visitation, and otherwise brought about many changes in the medical and administrative departments. The vacancy for superintendent at the Manhattan State Hospital, East, had not been filled and the law provided that the superintendent of the Manhattan State Hospital, West, shall become the superintendent of the both departments after the consolidation.

Among the changes in the service may be mentioned the removal of nearly the entire staff of the men's division to the staff house of the women's division; removal of the drug store from the west side to the east division; and a re-arrangement of the offices of the west side so that all visitors to patients are first received there, given passes, and then proceed to the respective wards. All the wards of the men's division have been re-numbered in consecutive order following the numbering of the women's division.

The character of the class of men patients in certain wards has been changed. Transfers of hospital and decrepit patients from the main building to the east building have been made, resulting in greater convenience and more attractive environment for these patients. The reception service has been installed in a semi-detached brick building having two floors. This building is well ventilated and lighted on both sides. It has all the conveniences and is in a manner separate from those wards regarded as custodial.

Incident to these changes has been the removal of the office of the purchasing steward from 309 Broadway to Ward's Island, the purchasing steward now occupying the former residence of the superintendent and maintaining his office in the rear portion of this residence.

The medical work mentioned in the last summary has been carried on with unabating fidelity, and since the consolidation of the two hospitals, staff meetings have been continued every week day. A thorough, systematic analysis of every case is made soon after admission, and again before discharge. These analyses or reports are typewritten, filed with the history, and form a part of the record of the patient.

Massage has become a thoroughly established mode of treatment, and in cases of mental trouble with sluggish functional condition of the viscera and circulatory impairment shown in coldness of limbs and extremities, gratifying results are experienced.

The outdoor treatment for tuberculous patients and other classes continues to show the value of this method. The untidy class also shows

marked benefit, both mental and bodily, from this open-air life. The shop workers enjoy the pleasant relief of unlimited air and sound sleep after the day's work.

A pavilion to accommodate about thirty-five tuberculous patients is being erected on high ground at the men's division. This building is 20 x 70 feet and is similar to Camp D erected last summer. It is built of light timber and designed very much after the plans of the two frame pavilions at the women's division, previously reported. They are so located as to obtain the largest amount of sunshine throughout the year. These pavilions are well lighted in summer, the windows can be removed, thus affording ample protection both winter and summer, with the maximum amount of light and fresh air.

During the summer season the steamer "Wanderer" has taken out parties of patients three times a week, varying the trips between the New York Bay and Long Island Sound. It is needless to say that this is a popular outing with our patients. During the season also, patients have enjoyed salt-water bathing at the tidewater pond located on the grounds of the men's division at the south end of the island.

The industrial school of the women's division has continued to be very beneficial. Here indolent, sluggish, and apathetic patients have been taken with the view of teaching them to engage in light employment. Several cases of dementia præcox have apparently received an impetus toward improvement from employment at this school. A school similar to this is about being established at the men's division.

The addition to the staff house mentioned in the previous summary has been completed and is now occupied by the majority of the officers on the entire staff. The new solarium also referred to in last summary connected with ward 17, has proven to be very satisfactory in every way.

Following is a list of the work completed or begun since April 1, 1905:

Painting: Interior of the old portion of the staff house; interior of the purchasing steward's cottage; three wards in the east building, men's division; interior of the bakery; interior of the power house; exterior woodwork, gutters, etc., of Verplanck and New buildings.

A quantity of furniture has been purchased for the addition to the staff house and the purchasing steward's cottage.

A new tent 20 x 50 feet has been purchased for the use of the night attendants.

The south side of Camp C (frame building) has been removed and replaced by portable sections which can be taken out in summer and substituted by canvas the same as with Camp D.

The boilers in the main boiler house, men's division, have been reseated and the Parson blower system installed.

A system for conveying coal from the west dock to the main boiler house, men's division, has been installed, including tracks and four cars. The coal for both divisions is to be unloaded at the west dock in the future.

An estimate has been approved and work is under way for renovating the men attendants' home of the east division. This work includes new spray baths, repainting, repairing floors, and new cork carpets for the corridors.

Awnings have been provided for the fire escapes at the west end of wards 44 and 45, men's division, to provide shelter from the sun, so that these fire escapes can be used by the patients in these wards during summer afternoons.

Continuous baths have been allowed by the commission for wards 44 and 45, reception service, in the east building.

An extension of 50 feet of each track of the coal trestle has been allowed to provide for additional storage of coal at the west side.

An estimate has been approved for ventilators and additional cooking apparatus at kitchen No. 4, men's division, the latter including two new copper kettles and one new eighteen-foot range, replacing old kettles and ranges.

—*Middletown State Homeopathic Hospital, Middletown.*—Advertisements have been published for bids for the construction of a new four-story building to accommodate about five hundred chronic patients. The three lower floors will be given over to day rooms, dormitories, and dining-rooms for patients, and each ward will have twelve single rooms. The fourth floor will be finished into rooms for nurses, attendants, and other employes. The building will contain its own kitchens, but heat and light will be furnished from the central plant.

The clinical pavilion containing operating room and sterilizing plant, gynæcological room and X-ray and diagnosis equipment, is completed and open. Another improvement completed during the summer is a new 180-horsepower, horizontal tube boiler, with Roney automatic stoker.

It has been the policy of the hospital during the past two years to encourage the removal from the hospital of as many harmless chronic patients as possible and by this course, instead of the previous gradual rise in population it has been possible to reduce the number of patients by forty. Leading up to discharge, visits home have been encouraged, and for this purpose paroles have been freely granted with gratifying results. None of the patients so far recommended for parole has caused serious trouble at home.

Special appropriations of the last legislature for additions and improvements at Middletown are as follows: For laundry enlargement, $10,000; for workshop (new), $2500; for walks, $1000; for new furniture, $1000; for additional radiators, $1000; for fence, $500.

—*Willard State Hospital, Willard.*—The law establishing the new board of managers and abolishing the board of visitors went into effect June 1. Aside from this, there has been no material change in the organization or management of the hospital during the past half-year. The medical work continues as heretofore, each case admitted being carefully studied according to the plans suggested by Dr. Adolf Meyer of the Pathological Insti-

tute. Abstracts of all cases are presented at the staff meetings which are held several times each week, and these abstracts are filed and constitute a valuable addition to the medical records. The operating room equipment has been increased by the addition of a water sterilizer and some new instruments.

It is gratifying to note the great diminution in diphtheria cases. Since April 1 only one case has occurred. Aside from this and a few mild cases of measles which have occurred during the past two months, the hospital has been free from infectious disease.

Among the more important improvements completed or now under way, the following may be mentioned: The dining-rooms at Sunnycroft and the Maples have been so enlarged as to increase the seating capacity materially. These dining-rooms have always been too small for the number of patients, and the increased space will add greatly to the comfort of the patients as well as to the appearance of the rooms. Work is progressing at the Lodge (employes' home), the rooms of which are being wainscoted and fitted with steel ceilings. The exterior of this building has been painted. The porches of the detached buildings have been repaired, wherever necessary, and repainted. Many other outside structures have been painted during the summer. A new engine has been installed in the laundry. It is hoped that the renewing of the plumbing at the Pines will begin in the near future. The attic at Grandview will be remodeled to provide rooms for the employes who now lodge in the basement of that building. The appearance and comfort of the wards has been improved by the addition of considerable furniture. The old hotel has been taken as a home for the married employes. The building has been thoroughly renovated, remodeled, and painted, electric wiring has been installed and steam heat supplied from the pumping station. Twenty-five employes are lodged in this building at present, and as soon as the necessary furniture is received there will be accommodations for between forty and fifty. Steel ceilings have been placed on six wards at the Pines.

On September 7, 1905, 210 patients were transferred here from the King's County State Hospital.

NORTH CAROLINA.—*State Hospital, Goldsboro.*—There is being erected at this hospital a brick building, three stories high, which will accommodate 96 female patients. The railroad spur referred to in the last summary has been completed.

—*State Hospital, Raleigh.*—The last legislature appropriated $40,000 for the purpose of erecting a wing to provide for insane women from the eastern district of this State. This building has been contracted for to be finished by November 1, 1906. It is to be 160 feet long by 48 feet wide, of four stories, and to contain 64 rooms. It will be heated and ventilated in the most approved manner, and will afford room for many insane women, for whom there is now no accommodation.

NORTH DAKOTA.—*State Hospital for the Insane of North Dakota, Jamestown.*—There will shortly be completed a hospital building within a short distance of the administration building which will contain accommodations for about 75 patients and the necessary nurses, examination rooms, a pharmacy, etc. About December 1 there will be completed a ward building to accommodate about 100 men of the working class. It will have a large general dining-room in the basement, a sitting room on the first floor, and a dormitory above with smaller rooms at the ends for the accommodation of employes or of patients who require single rooms. In the attic there will be three rooms for the male night nurses, as this building will be quieter during the day than the others of the group. Shower baths will be provided in the basement, and lavatories and bath rooms on each floor.

OHIO.—*Columbus State Hospital, Columbus.*—During the past summer this hospital has been very much overcrowded, there being an average of 1565 patients, while the capacity is but 1450.

Greer Cottage has been opened and has already proved of benefit in the treatment of more recent cases. A number of female nurses have been placed in charge of male wards and it is thought with improvement to the patients. The camp for tuberculous patients has again been in successful operation.

A large water tower has recently been erected with a capactiy of 100,000 gallons, and considerable work has been done in overhauling and modernizing the heating plant.

—*Cleveland State Hospital, Cleveland.*—The new infirmary building for which the legislature of 1903 appropriated $75,000 has been completed. It has a capacity of 200 beds, and twenty single rooms for the accommodation of nurses.

Numerous bids were received for the cold-storage plant, but as they were all in excess of the appropriation, which was $7500, all bids were rejected.

OREGON.—*Crystal Springs Sanitarium of Mt. Tabor, Portland.*—A new building, made necessary by the increased number of patients, has been completed. This is the largest of the nineteen which form the sanitarium, measuring 40 by 140 feet. It is intended in the near future to add two additional cottages to the institution.

PENNSYLVANIA.—*Friends Asylum for the Insane, Frankford.*—Improvements have been made to the fourth ward of the men's wing, consisting of the addition of thirteen bedrooms, two sitting rooms, two sun parlors and three bath rooms; also a fire-proof stairway to the second floor. The cost of these being about $25,000.

TEXAS.—*North Texas Hospital for the Insane, Terrell.*—Contracts have recently been made for two new buildings, and an addition to one of the

older ones, all of which work is to be completed in about nine months. These improvements will increase the accommodation for patients by 500, making the total capacity 1900. The training school for nurses opened for the third term on Monday, September 4, 1905, with a large attendance.

VIRGINIA.—*Western State Hospital, Staunton.*—Many improvements are going on at this hospital. The old brick walks around the buildings are being taken up, and granolithic walls substituted for them.

The new reservoir, with a capacity of nearly a million gallons of water, has been completed, and a well dug to the depth of 426 feet, from which a flow of water of about 165 gallons per minute has been secured by a pump test. It is expected to increase this flow by means of an air pump, and as soon as the necessary pumping apparatus is placed in position, a flow of 200 gallons per minute is looked for, solving the water problem for this hospital.

Contract has been made for a complete overhauling of the water-closets and lavatories throughout the entire institution. New sanitary hoppers and plumbing will be installed, with tile floors and wainscoting; porcelain bath-tubs and rain-bath system of bathing will be introduced, and everything placed in an up-to-date sanitary system of plumbing.

There is great demand for increased hospital accommodations in Virginia; all of the State hospitals being overcrowded. Sooner or later the State will be compelled to build another hospital in the Piedmont section of the State, or greatly increase the capacity of the existing hospitals.

WISCONSIN.—*Wisconsin State Hospital for the Insane, Mendota.*—The last legislature appropriated $40,000 for a congregate dining-room, general bath-rooms for each sex, an infirmary, two boilers, and for covering steam pipes. This sum has only partially been expended.

—*Milwaukee Hospital for Insane, Milwaukee.*—A pavilion for disturbed male cases has been erected in the rear of the north wing. The main driveway to the hospital has been improved with a combination curb and gutter, a concrete walk has been made from the superintendent's residence to the street railway station, and a macadamized road for heavy teaming has been constructed in the rear of the hospital. The old carpenter shop has been converted into a sewing department. Steel ceilings have been placed in the upper and lower general dining-rooms, supervisors' offices, drug store, wards, one both north and south, in the ice plant, and the new sewing department. The kitchen has been supplied with new urns and kettles, a range, and roasting oven. Two concrete silos have been built adjoining the barn, each having a capacity of 150 tons of ensilage.

MARITIME PROVINCES.—*Northern Hospital for the Insane, Winnebago.*—The water for this institution, other than that for drinking and cooking purposes, is derived from Lake Winnebago. This water is very dirty and

full of weeds, making it unfit for laundry and bathing purposes. The legislature appropriated money for the purpose of constructing a filter system and this has been installed at a cost of $1500. It is giving perfect satisfaction. The coal shed has been extended and new pumps and boilers have been installed.

ONTARIO.—*Homewood Sanitarium, Guelph.*—The cornerstone of a new building was laid with appropriate ceremonies on Thursday, September 21, 1905. The cost of this building will be $100,000 and it will accommodate 100 patients.

Appointments, Resignations, Etc.

ALLEN, DR. F. E., appointed Assistant Physician at Mendocino State Hospital at Talmage, Cal., May 6, 1905.

ANDERSON, DR. WM. H., appointed Superintendent of Eastern Washington Hospital for the Insane at Medical Lake, Washington, September 1, 1905.

ATWOOD, DR. CHARLES E., formerly Assistant Physician at Bloomingdale, White Plains, N. Y., resigned July 1, 1905, after thirteen years of service. After a period of study abroad he will enter into private practice in New York City.

AUSTIN, DR. MARY L., appointed Assistant Physician at Ohio Hospital for Epileptics at Gallipolis, Ohio.

BAILEY, DR. ALEXANDER, formerly Second Assistant Physician at Eastern Kentucky Asylum for the Insane, Lexington, Ky., appointed First Assistant Physician at Western Kentucky Asylum for the Insane at Hopkinsville, Ky.

BAKER, DR. AMOS T., appointed Second Assistant Physician at Dannemora State Hospital at Dannemora, New York, January 1, 1905.

BINGHAM, DR. HARRY V., appointed Medical Interne at Middletown State Homeopathic Hospital at Middletown, New York, July 1, 1905.

BRADFIELD, DR. J. W., formerly Third Assistant Physician at State Lunatic Asylum at Austin, Texas, promoted to be Second Assistant Physician.

BROOKS, DR. PAUL B., formerly House Surgeon at Bellevue Hospital at New York, N. Y., appointed Junior Assistant Physician at Buffalo State Hospital at Buffalo, N. Y., July 19, 1905.

CAREY, DR. HENRY, formerly Interne at Wesley Hospital, appointed Assistant Physician at Michigan State Hospital at Kalamazoo, Mich.

CHAPIN, DR. S. W., appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, New York City, August 28, 1905.

CLARK, DR. DANIEL, formerly Medical Superintendent of Toronto Asylum at Toronto, Ontario, resigned.

CLARKE, DR. C. K., formerly Medical Superintendent of Rockwood Hospital at Kingston, Ontario, transferred to Toronto Asylum at Toronto, Ontario.

CLAYTON, DR. MARY, appointed Woman Physician at Binghamton State Hospital at Binghamton, New York.

CONRAD, DR. CHAS. E., appointed Medical Interne at Manhattan State Hospital at Ward's Island, New York City, August 1, 1905.

CUSHMAN, DR. R. A., formerly Assistant Physician at Mendocino State Hospital at Talmage, Cal., promoted to be First Assistant Physician, May 6, 1905.

DOUGLAS, DR. SUMNER E., formerly Medical Interne at Manhattan State Hospital at Ward's Island, New York City, resigned August 10, 1905.

DOWNER, DR. F. J., formerly Assistant Physician at Upper Peninsula Hospital for the Insane at Newberry, Mich., died suddenly from organic heart disease February 18, 1905, at the close of a lecture to the training class.

EASTLAND, DR. JAMES H., appointed Fourth Assistant Physician at State Lunatic Asylum at Austin, Texas.

ELSTER, DR. L. A., formerly First Assistant Physician at Mendocino State Hospital at Talmage, Cal., resigned May 6, 1905.

EVANS, DR. EDWIN E., appointed Assistant Physician at Hospital for Insane, No. 1, at Fulton, Miss.

EVERETT, DR. EDWARD A., formerly Second Assistant Physician at Middletown State Homeopathic Hospital at Middletown, New York, resigned September 15, 1905, to conduct a private sanitarium at Elmira, New York.

FISHER, DR. ALBERT M., appointed Assistant Physician at State Hospital for the Insane of North Dakota at Jamestown, N. D., April 12, 1905.

FITZGERALD, DR. JOHN G., formerly Medical Interne at Buffalo State Hospital at Buffalo, N. Y., resigned September 1, 1905, and appointed Clinical Assistant at Sheppard & Enoch Pratt Hospital at Towson, Md., September 15, 1905.

FULBRIGHT, DR. WILLIAM, formerly Third Assistant Physician at North Texas Hospital for the Insane at Terrell, Texas, resigned to enter private practice.

GRAVES, DR. MARVIN L., formerly Superintendent of Southwestern Insane Asylum at San Antonio, Texas, resigned.

GUEST, DR. ADOLPHUS W., formerly Assistant Physician at State Hospital for the Insane of North Dakota, Jamestown, N. D., resigned to re-enter private practice.

HARRISON, DR. J. FRANK, appointed Assistant Physician at Hospital for Insane No. 1, at Fulton, Miss.

HASSELTINE, DR. HERMAN E., formerly Medical Interne at Manhattan State Hospital at Ward's Island, New York City, resigned August 1, 1905.

HAYS, DR. GEORGE A. B., formerly Superintendent at Insane Asylum of the State of Louisiana at Jackson, La., appointed to be Superintendent at Louisiana State Hospital for Insane at Alexandria, La., September 1, 1905.

HICKEY, DR. CHARLES E., appointed Medical Superintendent of Cobourg Asylum at Cobourg, Ontario.

HOCH, DR. AUGUST, formerly Assistant Physician and Pathologist at the McLean Hospital at Waverley, Mass., appointed First Assistant Physician and Special Clinician at Bloomingdale at White Plains, N. Y.

HOWELLS, DR. W. J., formerly Superintendent of the Eastern Washington Hospital for the Insane at Medical Lake, Washington, resigned September 1, 1905.

HULL, DR. ANNA M., appointed Medical Interne at Middletown State Homeopathic State Hospital at Middletown, New York, February 15, 1905, and resigned July 15, 1905.

HURLBUT, DR. LEMUEL R., appointed Medical Interne at Binghamton State Hospital at Binghamton, New York.

KAFFIE, DR. LEO, appointed Assistant Physician at Insane Asylum of the State of Louisiana at Jackson, La.

KIRK, DR. L. H., formerly Second Assistant Physician at State Lunatic Asylum at Austin, Texas, promoted to be First Assistant Physician.

KUHN, DR. WILLIAM F., appointed Superintendent at State Hospital, No. 4, at Farmington, Mo.

LASSITER, DR. W., formerly Assistant Physician at Insane Asylum of the State of Louisiana at Jackson, La., appointed Assistant Physician at Louisiana State Hospital for Insane at Alexandria, La., September 1, 1905.

LEWIS, DR. W. C., appointed Assistant Physician at Hospital for Insane, No. 1, at Fulton, Miss.

LOLER, DR. WILLIAM J., formerly Assistant Physician at St. Louis Insane Asylum at St. Louis, Mo., resigned May 15, 1905.

MCALPINE, DR. K. K., appointed Assistant Physician at St. Louis Insane Asylum at St. Louis, Mo., September 4, 1905.

MCCLISH, DR. C. L., appointed Assistant Physician at Agnew State Hospital at Agnew, Cal.

MCKINNIS, DR. C., of Marion, appointed Interne at Columbus State Hospital at Columbus, O.

MCNICHOLL, DR. E. T., formerly Medical Superintendent of Cobourg Asylum at Cobourg, Ontario, retired.

MACDONALD, DR. ROBERT S., appointed Medical Interne at Dannemora State Hospital at Dannemora, New York.

MACKINTOSH, DR. J. A., appointed Pathologist at Mt. Pleasant State Hospital at Mt. Pleasant, Iowa.

MAHONEY, DR. THOMAS, appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, New York City, July 1, 1905, and resigned August 26, 1905.

MAXWELL, DR. THOMAS O., formerly First Assistant Physician at State Lunatic Asylum at Austin, Texas, appointed Superintendent of Southwestern Insane Asylum at San Antonio, Texas.

MERRINESS, DR. HARRY E., JR., formerly Assistant Physician at Manhattan State Hospital at Ward's Island, New York City, resigned August 11, 1905.

MERRITT, DR. WALTER, appointed Third Assistant Physician at State Insane Hospital at Jackson, Miss.

MILTIMBER, DR. EDWARD, appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, New York City, May 15, 1905, and promoted to be Medical Interne, August 1, 1905.

MULLIN, DR. E. W., appointed Assistant Physician at Upper Peninsula Hospital for the Insane at Newberry, Mich.

NORTH, DR. CHARLES H., formerly First Assistant Physician at Dannemora State Hospital at Dannemora, New York, promoted to be Medical Superintendent, December 1, 1904.

O'MALLEY, DR. MARY, formerly Woman Physician at Binghamton State Hospital at Binghamton, New York, resigned, and appointed Woman Physician at Government Hospital for the Insane at Washington, D. C., August 1, 1905.

OHLMACHER, DR. ALBERT P., formerly Superintendent of Ohio Hospital for Epileptics at Gallipolis, Ohio, resigned.

OVERTON, DR. JOHN, appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, New York City, June 12, 1905, and resigned June 24, 1905.

PAINTER, DR. A. M., formerly Assistant Physician at St. Louis Insane Asylum at St. Louis, Mo., resigned September 1, 1905.

PANNELL, DR. WALTER L., formerly Medical Interne at Craig Colony, Sonyea, N. Y., transferred to Buffalo State Hospital at Buffalo, N. Y., September 1, 1905.

PARKINSON, DR. JAMES M., formerly Junior Physician at Manhattan State Hospital at Ward's Island, New York City, resigned April 30, 1905.

PIERSON, DR. CLARENCE, appointed Superintendent at Insane Asylum of the State of Louisiana at Jackson, La., September 1, 1905.

POFF, DR. C. M., formerly Fourth Assistant Physician at North Texas Hospital for the Insane at Terrell, Texas, promoted to be Third Assistant Physician.

POMEROY, DR. JOHN L., appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, New York City, June 1, 1905, and promoted to be Medical Interne, August 1, 1905.

POPE, DR. F. W., appointed Assistant Physician at Northern Hospital for Insane at Winnebago, Wis., February 23, 1904.

RICHARDS, DR. J. S., appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, New York City, August 24, 1905.

RICKETTS, DR. HENRY E., appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, New York City, June 12, 1905, and promoted to be Medical Interne, August 1, 1905.

RICKSHER, DR. CHARLES, appointed Clinical Assistant at Sheppard & Enoch Pratt Hospital at Towson, Md., June 5, 1905.

RYAN, DR. EDWARD, appointed Superintendent of Rockwood Hospital at Kingston, Ontario.

SMITH, DR. JAMES W., formerly Superintendent of Hospital for Insane, No. 1, at Fulton, Miss., resigned.

SMITH, DR. LEROY J., appointed Junior Physician at Manhattan State Hospital at Ward's Island, New York City, June 9, 1905, and resigned August 15, 1905.

THOMAS, DR. WILLIAM, appointed Fourth Assistant Physician at North Texas Hospital for the Insane at Terrell, Texas.

THOMPSON, DR. L. M., formerly Superintendent of the Missouri Colony for Feebleminded and Epileptic at Marshall, Mo., retired June 1, 1905.

THOMPSON, DR. NELSON W., appointed Clinical Assistant at Middletown State Homeopathic Hospital at Middletown, New York, August 12, 1905.

TIMMONS, DR. ROSS E., appointed Assistant Physician at Toledo State Hospital at Toledo, Ohio.

UNTERBERG, DR. H., formerly Assistant Superintendent at St. Louis Insane Asylum at St. Louis, Mo., appointed Psychiatrist and Assistant Superintendent at State Hospital, No. 3, at Nevada, Mo.

VERNON, DR. FRANK S., appointed First Assistant Physician at State Hospital, No. 4, at Farmington, Mo.

WEIGAND, DR. FRANK J., appointed Junior Assistant Physician at Dannemora State Hospital at Dannemora, New York, February 1, 1906.

WHELPLEY, DR. F. L., formerly Assistant Physician at St. Louis Insane Asylum at St. Louis, Mo., promoted to be Assistant Superintendent.

WHITTINGTON, DR. WILLIAM L., appointed Superintendent of Missouri Colony for Feebleminded and Epileptic at Marshall, Mo., June 1, 1905.

WILHITE, DR. J. T., formerly Fourth Assistant Physician at State Lunatic Asylum at Austin, Texas, promoted to be Third Assistant Physician.

WILHITE, DR. O. C., formerly First Assistant Physician at Cherokee State Hospital at Cherokee, Iowa, resigned September 1, 1905, to become Superintendent of the new State Hospital for Inebriates soon to be opened at Knoxville, Iowa.

WILLIAMS, DR. PORTER E., appointed Superintendent of Hospital for Insane, No. 1, at Fulton, Miss.

WILSON, DR. JOHN R., appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, New York City, August 25, 1905.

WOOLLEY, DR. HERBERT C., formerly Medical Interne at Willard State Hospital at Willard, N. Y., resigned October 1, 1905.

Pamphlets Received

Bulletin of the University of Texas, No. 63, Medical Series No. 2. The Care of the Insane. Dr. M. L. Graves.

Dyspepsia Considered as a Brain Disease. A Historical Contribution to the Neuropathic Side of this Subject. Charles H. Hughes, M. D. Reprinted from the Alienist and Neurologist, August, 1905.

Annual Report of the Essex County Hospitals for the Insane, Newark, N. J., for the year ending April 30, 1905.

Movimiento de la Casa de Orates de Santiago, Chili, en el ano 1904.

Memorias de los Medicos de la Casa de Orates de Santiago, Chili, correspondientes al ano 1904.

The Physician and the Sunday Question. Dr. George Richter. Reprint from The Regular Medical Visitor, August 15, 1905.

VOLUME LXII JANUARY, 1906 No. 3

AMERICAN JOURNAL OF INSANITY

MELANCHOLIA,

THE PSYCHICAL EXPRESSION OF ORGANIC FEAR.[1]

BY J. W. WHERRY, M. D.,
Medical Superintendent, The Glenwood, Dansville, N. Y.

In the very nature of things there can be no disease of the mind, and sooner or later so-called mental diseases must be recognized as simply *states of mind* which exist by reason of disease processes in some one or more of the organs of the body. There may be a derangement of the mental faculties; there may be important and radical changes in mental operations; the mind may run riot in delirium, or weave itself into the fantastical and grotesque forms of delusional insanity, or vanish completely beneath the somber shadows of dementia, but it cannot become diseased, because in its very nature there is nothing upon which disease can fasten.

Can pathological states be assigned to ideas? Is abstract thought subject to infection or degeneration? Reason may "totter upon her throne" but does she ever "languish upon a bed of sickness?" Then how can there be a disease of the understanding, or a disease of judgment, or a disease of any other mental faculty?

From one point of view it is not a matter of surprise that many are misled and adopt ideas regarding the relation of the mind to insanity entirely at variance with the facts of science. When the leading alienists of the country cry aloud, as with one voice, that all forms of insanity are due to abnormal bodily conditions, either located in the brain or elsewhere, while, at the same time, reports are published of various forms of insanity caused by disappoint-

[1] Read by title at the Sixty-first Annual Meeting of The American Medico-Psychological Association, San Antonio, Texas, April 20, 1905.

ment, or grief, or some other psychical state, is it to be wondered at that the vast army of "lesser lights" become bewildered and revert to the original idea of a mind existing in the body, but apart from it, and subject to its own peculiar diseases? Alienists must take one ground or the other in this matter if they wish to escape the charge of inconsistency. How many superintendents and assistant physicians in hospitals for insane report the condition of a patient as follows: "He is becoming more and more impaired mentally but remains in good bodily health." How can such a statement be made to conform with present theories? If all insanity is due to disease of the body, or, as the more radical believe, is due to disease of the brain, how can a patient, who is becoming more impaired mentally, be in good bodily health? How would it sound to say, of a man afflicted with stomach trouble, that the "indigestion" is increasing but he is in good bodily health? If the function of any organ is impaired how can a man be in good bodily health? The mind is either a function of the brain or it exists independently of the body. If it is only a function it cannot be diseased in itself, either because of infection, or by contagion from its own psychical states. If it exists as a thing in itself, then are we indeed in the dark and far from the truth. This much we know, it cannot be a thing in itself and also a function of the brain. These theories are antagonistic, and the man who believes the one and advocates the other is inconsistent, to say the least.

Disease is defined as, "A condition of the body marked by inharmonious action of one or more of the various organs, owing to abnormal condition or structural change." If this definition is correct, and I believe it is sufficiently so for all practical purposes, there can surely be no disease of the mind because the mind is not an organ of the body, nor is it subject to structural change. It is the functional product of an organ itself, and there can no more be a disease of the mind than there can be a disease of the bile or a disease of the urine.

Mental states or conditions, when abnormal, are only symptoms, and attest to the presence of bodily, not mental disease. Whatever the form these abnormal mental states may assume they point unerringly to the nature of the bodily disease or disorder from which they spring. All abnormal mental states are due either to intellectual derangement, or emotional derangement, or

to a combination of these two. Idiocy, imbecility, and dementia are the product of intellectual involvement. Idiocy and imbecility indicate in varying degrees the absence of intellect through non-development of the brain; dementia points to a day that is done and marks the gradual sinking of the intellectual sun. On the other hand, delusional insanity has its origin in the emotions, and derives its form and structure from the character of the emotion which gives it birth; while in imbecility with delusions, or dementia with delusions, we have the involvement of both the intellect and the emotions; the emotional involvement, however, being characterized by its evanescence, appearing and disappearing with the appearance and disappearance of the emotional state which produces it; while the intellectual conditions in imbecility and dementia, being due to organic brain alterations, persist steadily to the end.

I have said that all abnormal mental states are due to intellectual changes, or to emotional changes, or to a combination of these two; that abnormal intellectual conditions are known as idiocy, imbecility, and dementia, and that abnormal emotional conditions are known as the various forms of delusional insanity. If this be true it may be well to turn our attention for a moment to the consideration of these intellectual and emotional states which determine the form of insanity present, but more especially to those emotions which give form and structure to delusional insanity and without which no delusive idea can originate.

The field of discussion opened up by a subject of this nature is practically unlimited in extent, and I can do no more in this paper than lightly touch upon the following propositions, namely:

1. *That there are organic as well as ethical emotions.*

2. *That the relation of the body to the mind is that of master to servant.*

3. *That the influence of the brain has been overestimated in the production of abnormal mental states.*

4. *That the organic emotion of fear has its origin in visceral conditions.*

5. *That organic fear is a primitive instinct and necessary to the preservation of the individual.*

6. *That abnormal organic fear is the basis of melancholia.*

7. *That melancholia is but the expression of abnormal visceral conditions.*

It may be said in the beginning that intelligence and emotion are not limited to brain cells alone. While the highest form of intelligence and the most exalted emotions are peculiar to brain structure, it is none the less true that intellect finds its physiological counterpart in cell intelligence, and that the higher and more ethical emotions find their physiological counterparts in the organic feelings, or in instinctive affinity and repulsion.

Intellect, as expressed through reason and judgment, enables us to adapt acquired knowledge to the necessities of the body and leads us to adopt such measures as are most likely to preserve the body against injury or disease; to select the food best fitted to purposes of nutrition; and to adapt ourselves to our environment or, if necessary, to modify our environment to our needs; but cell intelligence, in a limited degree, does the same. It selects the beneficial and rejects the injurious. It adapts itself to changed conditions. It obliterates the ravages of injury or disease by reproducing itself if it can, or, if this is impossible, the breach is temporarily repaired with scar tissue. More than this, it, too, adopts such measures as are most likely to preserve the body against the onslaughts of its enemies. Products of decomposition are both recognized and removed, while bacillary foes which escape the hygiene and asepsis of intellect, meet with stubborn and well-organized resistance at the hands of cell intelligence.

PROPOSITION I.—*That there are organic as well as ethical emotions.*

The same parallelism noticed between the intellect and cell intelligence exists, and is observed, between psychical and organic emotions. The body cell hates, and desires, and fears. It instinctively cleaves to that which is good and rejects that which is harmful. It shudders with a presentiment of coming harm and recognizes dangers which are imperceptible to the mental eye. It feels the presence of a foe even while judgment pronounces him a friend. It hates without reason; it desires without judgment; it lusts without a motive, and it trembles at dangers the mind knows not of.

While all emotions are known only as they are recognized in consciousness, yet it is evident that, although they have a common ground of recognition, they do not all have a common source of origin. Emotions such as joy, and sorrow, and hope, and grief,

may have a purely psychical content; while such emotions as hate, and lust, and desire, and fear, are organic in their nature and have their origin in sensations of organic life. They are associated with, and have their basis in, the fundamental elements of existence. The man who, in expressing certain emotions, "lays his hand upon his heart," lays it much nearer their source of origin than if he placed it on his head.

In certain forms of animal life all organic emotions are for the benefit and protection of the individual. Hate, or dislike, leads to instinctive caution; lust, to reproduction; desire, to that degree of self-assertion which secures the most possible good to the individual, and fear, to repulsion of objects of danger and consequent self-preservation.

These instinctive emotions always have existed and always will exist, and their proper use has served to preserve and perpetuate animal life, and it is only when they become unduly exaggerated by reason of disease, or faulty heredity, that they assume the expression of pathological conditions. It is abnormal organic hate that characterizes the misanthrope; it is abnormal organic lust that distinguishes the libertine; it is abnormal organic desire that marks the pathway of crime, and it is abnormal organic fear that grips the melancholiac.

These organic emotions, indeed, are the basic elements of our natures. They are coexistent with life itself. They are the outgrowth of those three fundamental principles, self-assertion, self-preservation, and reproduction, and, through all the vicissitudes of subsequent existence, they have preserved their identity and original characteristics, for they still cluster around the *self* as a body as they did around the *self* as a single cell.

Psychical emotions are, in fact, but modified organic emotions. Psychical hate is organic hate modified by reason. Psychical love is organic lust tempered by judgment. Psychical desire is organic desire held in leash by a knowledge of subsequent punishment, and psychical fear is organic fear throttled by courage or fortitude. But reason, judgment, courage, and fortitude were born but yesterday. They were acquired from others and were instilled into us through instruction and experience. They are the outgrowth of civil life and social requirements, while the emotions they seek to modify and control trace their genealogy

back to the very beginning of things, and had their origin in the vital necessities of life itself.

But nature is considerate during health, and the relation existing between a normal mentality and normal organic emotions is one of harmony and tranquillity, and it is only under abnormal conditions of one, or the other, or of both, that we find the disharmony and internecine disturbance which characterizes the criminal and the insane. In their proper and due proportions they react beneficially upon each other. Mentality holds the organic emotions in check, and the organic emotions contribute life, and color, and personality to the mind; while out of all these organic emotions, or, rather, out of all the organic sensations which we recognize in consciousness *as* these emotions, the mind forms the personal *Ego.*

But between the ethical emotions and the organic emotions there exists perfect peace and harmony only in the most favored individuals. With a large majority it is at best an unending struggle between protoplasm and ethics; between cell intelligence and education; between instinct and culture; between self-preservation and brotherly love, and it only requires that the controlling faculties of the mind become weakened by disease of the brain, or the organic emotions become intensified by reason of the perverted organic sensations accompanying diseases of the viscera, and then will follow crime, or insanity, or both.

PROPOSITION 2.—*That the relation of the body to the mind is that of master to servant.*

There is one feature in physiology of which we are woefully ignorant, and it transcends all others in importance, for it deals directly with the fundamental and vital elements of life itself. I refer to the relations existing between the brain and the visceral organs. Of the relation which the brain bears to these organs we have some small knowledge, but what of the relation which these organs bear to the brain? Do these organs, in which the essential and indispensable forces of life are continuously in active operation, have no influence upon the brain? Is it possible, that these engines of existence which can make and unmake every cell in the body, which can unravel the nervous network of the brain itself and knit it up again, can exert no influence except through nutrition? Are there no sensations of organic life?

Has the brain no knowledge of the conditions of these organs except through the quality of nourishment supplied?

The mind is not the fountain head and primal source of all human action, nor is the brain the sole repository, as well as originator, of all that a man thinks, and feels, and does. It is well to consider, and to realize, that in all the abnormal acts of civil and social life the organic emotions must be reckoned with. It is the body that is the *I*, and not the mind. While the latter may be denied none of its highest and holiest attributes, it is this body of mine, this flesh, and blood, and nerve, and bone, that makes me what I am. The mind may supply the most exquisite ethical, religious, and intellectual experiences, but it is this material body that is the source of temperament, of moods, of character, of a sense of well- or ill-being, of elation, of depression, of the organic emotions, of every fundamental expression of life. It moves, it breathes, it has its being, and, in spite of metaphysical teachings and religious dogmas, it holds the mind and all its attributes in the hollow of its hand. In health it is prime minister to the court of Mind, and in disease its influence over mentality is supreme. It is the chief arbiter of individual fate and, while we cry, All Hail! to man's crowning glory, the Mind, we bow our heads in calm submission and stand or fall at the command of a body cell. From center to circumference, from coccyx to phalanges, a thousand shuttles are weaving the web of destiny. They are forming hour by hour, and day by day, the warp and woof of existence, but the mind is wholly unconscious of what they do. Out of all this cellular work and turmoil, however, a flood of sensations sweeps over mentality, vague, uncertain, indefinite, but out of these is fashioned, in consciousness, the organic emotions.

These organic emotions are often the real mainsprings of action and in abnormal conditions of the mind they are always to be duly considered. "In other words," says Ladd, in *Philosophy of Mind*, "what the individual man is, physically considered, either in respect to the whole course of his psychical development or in respect to the more general features of his psychical life at any particular period, is dependently connected with the character and development of *the bodily organism*. This principle, thus broadly stated, admits of indefinite illustration and proof. It is enough for our present purposes merely to refer to some of its more

important applications. The peculiarities which distinguish the sexes are especially worthy of note here. In spite of the modern effort, in a political and social way, to minimize or overlook these differences, the scientific study of the male and the female of the human species, in both physiologic and psychical aspects, only serves to multiply and emphasize these differences. Not in those respects alone which are obvious to all do men and women differ. In very blood and tissue, and in the most subtle ways and hidden corners of the physical and mental being of both, are they unlike. And the differences of a mental sort are, many of them, *plainly assignable for their causes to original or developed differences of a bodily kind.* In the same connection may be mentioned the dependence of transient or more permanent psychical manifestations upon those bodily changes which belong to the different ages of life. That change in the sentiments which comes with the age of puberty, and the sudden and emphatic stress then laid on the psychical peculiarities of sex, are obvious enough. But psychology is just beginning successfully to investigate those important mental changes which go on far more slowly and quietly in constant dependence upon the growth, the nutrition, the waste, and the decay of the various bodily tissues. *The psycho-physical doctrine of disposition, or mood, as well as the physiological explanations of all matter of so-called diseased or abnormal mental conditions enforces the same principle.*" And Bastian says: "Again, by reason of the direct or indirect connection of the viscera with the brain, the organic states of the various organs are capable of influencing the temper or mental state of the individual, either consciously or unconsciously. Visceral states may, independently of their conscious realization, prompt to automatic or instinctive acts; or, they may impress themselves upon the conscious life of the individual, and lead more or less directly to a series of voluntary actions." Ribot also says: "Organic feelings form the self; amnesia of the feelings is the destruction of self."

I am afraid the tendency has been to exalt the brain pathologically above its real position in the bodily economy, and to do so by underestimating the importance of other organs. We are inclined to think that the superior psychological position of the brain not only lifts it above its less fortunate neighbors, but ren-

ders it immune from the contaminating influences of its distinctly plebeian surroundings; that it is a king in his castle, to whom the sickness or death of one or more of his subjects, among the countless toilers in the field, signifies nothing; that he can close his eyes to their sufferings and turn a deaf ear to their entreaties; that if he *does* adopt any revolutionary ideas they *must* have originated in his own household, for he would hold no communion with the rabble; that, in other words, if the brain shows any vagaries of function they must have developed within its own domain, for they could not have arisen at the suggestion of any baser tissue.

Under some circumstances it may be well to hold the brain strictly responsible for its own conduct and behavior, but, at the same time, it is also well to remember that it does not exist free and untrammeled, and that while its patron saint, Evolution, has done much for it in the way of culture and education, it still is encompassed by a horde of less fortunate friends and relatives, each asserting his kinship and pouring his tale of woe into a reluctant, perhaps, but not unsympathetic ear. Protoplasm has memory, and liver protoplasm has not forgotten when it and brain protoplasm lived together in a single cell, each equally helpful to the other, and it does not propose that brain protoplasm shall forget it either. To rise from the ranks is a commendable thing to do, even for an organ, but it has its disadvantages, and even the brain cannot cut itself entirely loose from early associates and ignore old friends and acquaintances, without the latter taking advantage of every opportunity to make their old companion realize that he is still dependent upon them for all that he is, and for all that he may be; that with all his boasted glory he is still of the earth, earthy, and that the wonderful intellectual fabric he has so patiently reared is but the substance of a dream, which may be displaced at any time by another dream, or completely dispelled by a breath.

No, the dominating influence of the sensations of organic life upon the brain must not be overlooked; nor must we ignore another fact. While the brain is, in a measure, isolated from other organs and occupies a cavity by itself, there are, in the sympathetic nerves, millions of cells identical with its own, or, at least, next of kin, that dwell in the very midst of life's industrial

hum; that feel continuously the pulse and throb of energy; that commune daily with tissue builders and blood makers; and hear the grinding of the mills; and see the elemental struggle at the making of a man; and know all the secrets of those marvelous laboratories which transform chemistry into energy; and observe the mysteries of life and death within the very heart of nature. Do these cells tell nothing to the brain of what they see, and hear, and feel? Does none of this heat, and turmoil, and roar, and rumble, reach the master mind, even though it awakens no conscious response? Does not the rumble and roar of machinery, after a time, fall unconsciously upon the workman's ear? But the rumble and roar is there, though he hears it not, and in the stillness of the night it will rumble and roar to the point of distraction.

PROPOSITION 3.—*That the influence of the brain has been overestimated in the production of abnormal mental states.*

It is possible that we have underestimated the influence of organic sensations in many mental conditions and have held the brain responsible for certain overt acts of mentality which really had their origin in visceral sources. A blow on the abdomen will cause unconsciousness as quickly and as effectually as when it falls upon the skull. It is extremely doubtful if the exhilarating or depressing effects of intoxication from alcohol are due so much to its direct effect upon the brain as to its primary influence upon protoplasm in every part of the body, with only a secondary influence upon the brain centers. Alcohol produces its effect upon all tissue and not upon that of the brain alone; indeed, the tissue changes caused by its excessive and protracted use are much more pronounced in the visceral organs than in the brain itself; and we cannot possibly conceive of alcohol, even when first introduced into the body, circulating freely in the blood but expending its force only within the cranium.

Alcohol produces the same symptoms of intoxication upon man, with his well-developed brain; upon animals with less brain; upon insects with still less brain, as well as upon forms of life possessing *no* brain. Dr. Weir, in his *Dawn of Reason,* says: "I have repeatedly noticed the action of alcohol on rhizopods. When small and almost inappreciable doses were exhibited, the little creatures became lively and swam merrily through the water;

but, when large doses were given, they soon became stupified and finally died." Thus single cells—protoplasm itself—can become lively and swim merrily and finally become stupified and die under the influence of alcohol. Can brain centers do any more than this? Here is a primitive single cell intoxication. The body is but an aggregate of single cells. Would it then be unreasonable to think that, in drunkenness, every cell in the body is intoxicated? Would it not be more reasonable to say this than to say, that, although bathed in alcohol, every cell in the body is sober except those of the brain?

With nerve and organic cells under the influence of alcohol the sensations of organic life carried to the brain would be pleasant indeed, and the fundamental tone of feeling would reflect the changed conditions. With every cell in the bodily fabric intoxicated and, perchance, as lively and as merry as a rhizopod under the same conditions, I can easily conceive of a flood of sensations being poured into the brain which could be elaborated into nothing but a sense of unusual exhilaration and of bodily comfort.

In fact, is not this sense of bodily comfort strictly of bodily origin? Is not the sense of bodily comfort following the use of morphine due to its effect upon individual nerve cells throughout the body, rather than to its isolated and limited influence upon the brain? The use of morphine certainly produces a sense of well-being, but because this feeling is present only in consciousness, and thus seems to reside only in the brain, it does not follow that it originates there merely as a result of the action of the morphine upon brain tissue. When, after long use, the morphine is withdrawn, the bodily sensations then occurring indicate the points where the influence of the drug was first felt. Not alone brain cells, but every cell in the body has been stupified, and stupified cells do not digest, or assimilate, or store up glycogen, or secrete, or excrete, in a normal manner, and this stupefaction of the agents of metabolism has more to do with coexisting mental conditions than any direct effect of the drug upon the brain itself. To be sure, opium will stupify a brain cell, as it does other cells, and this stupefaction will result in a sluggish mentality, but a sluggish mentality does not strike at the vital sources of existence as does a sluggish liver, or a sluggish heart.

For this reason opium has been discontinued as a remedy in

melancholia. It was originally used because it was believed that it excited a directly "comfortable effect" upon the brain, and would thus dispel the morbid tone of feeling which permeated mentality. It was thought that the morbid feeling was due altogether and solely to mental derangement and that relief would come from a drug supposedly directed exclusively to the brain. The truth is, that the stimulating and cheerful effect witnessed in some cases was due only to the influence of the drug on the sympathetic nerve cells, and the modified sensations of organic life in consequence thereof. That this is true is evidenced by the fact that, while this benumbing of the visceral nerve cells gave some mental relief from the morbid sensations arising from pleuro-peritoneal sources, it also, at the same time, by reason of its similar benumbing effect upon metabolism, provoked and eventually increased the morbid tone of feeling which it was meant to assuage.

That the sense of comfort and well-being experienced after the administration of morphine is due to its stupifying effect on the sympathetic nerves, which thus prevents the transmission of sensory stimuli from visceral organs to the brain, and, consequently, prohibits the occurrence of feelings of discomfort or depression, is shown by the fact that upon the withdrawal of the morphine the most disastrous results follow. "The most marked symptoms," says Fisher, *Nervous Diseases by American Authors*, "are observed upon the withdrawal of the drug (morphine). There is intense anxiety, a dread of some impending evil; the person may then become maniacal. There is marked insomnia and restlessness, with depression, and frequently suicidal intent."

In other words, while the use of the morphine excites, in itself, general functional disorder in all viscera, the brain remains in ignorance of this universal calamity, because the influence of the drug on the end organs, located in the viscera, prevents the passage of sensory stimuli and the consequent recognition in consciousness of the deplorable condition. In the absence of all visceral sensory stimuli consciousness experiences a sense of ease and comfort. But when the drug is withdrawn; when visceral nerves, freed from the restraint of sedation, again awaken to their duty, what an overwhelming torrent of morbid sensory stimuli are carried to the brain. Practically every cell in the body has

been pouring its tale of woe into an ear deaf to all entreaty, but, now that communication has been re-established, and every nook and cranny of the body is flooding the brain with the most direful stories of death and disaster, is it a matter of surprise that "there is intense anxiety, a dread of some impending evil, and the person may even become suicidal?"

Brunton says: "From this producing a feeling of comfort and mirth cerebral stimulants are also called exhilarants. The functional activity of the brain depends upon the tissue change which goes on in the cells and fibers which compose it, and the amount of tissue change is regulated to a great extent by the quantity and quality of the blood supplied to the organ." This is all very true, but the application is incorrect. He forgets that the effect of the drug is to produce a thousand times more change in cells and fibers outside of the brain than inside. He forgets to take into account the very obvious fact that every individual cell in the pleuro-peritoneal cavity feels, and responds, to the influence of the drug just as much as the brain cells do. He forgets that this response of the brain cells, which he calls "comfort," is simply the summation of responses from cells elsewhere in the body. Comfort does not arise from the condition of brain cells, neither does mirth, or a sense of well-being. There are no sensory cells in the brain. Comfort and exhilaration come from visceral conditions. An increased circulation of blood in the brain, regardless of quality, does not in itself produce a feeling of comfort. Nitroglycerine causes a marked increase in cerebral circulation, but while it may stimulate the intellectual function of the brain, it certainly does not conduce to comfort. On the contrary, the result is headache. No amount of cerebral stimulation will produce a feeling of comfort while there is acute pain in any part of the body. Whenever the drug, by means of increased circulation, and, consequently, increased secretion and excretion over a large area of the body, or by any other means, produces a condition of comfort in organic cells, then, and not till then, will the fact be recognized by the brain as a feeling. But because the condition of comfort is recognized by the brain does not indicate that it originates there, any more than that the objects we see or touch have a cerebral origin.

We find no difficulty in referring external sensations to their

proper objects; then why find the application to internal sensations so perplexing? It is safe to lay down as a fundamental proposition that no sensation can originate in the brain. The brain receives and interprets sensations, but cannot originate them. All feelings of bodily comfort or discomfort, then, must come from sensations received by the brain but originating elsewhere. Accepting the proposition that their origin cannot be central, and that they must exist before this feeling of comfort can occur; then we are reduced to the simple statement, that before there can be a sense of well-being there are sensations, and that these sensations must have their origin either outside or inside the body proper.

Of the sensations arising on the surface of the body nothing need be said, for these are quite well understood. The sensations arising inside the body, however, are not well understood and, consequently, can only be approached theoretically, though experience has thrown considerable light upon the subject. That there is a conscious organic pain, no one will deny; that there are also conscious organic sensations which are something less than pain will also be accepted; but can we carry the argument further and say that still less intense sensations also occur, which do not rise above the threshold of consciousness, but exist in subconscious cerebration as a fundamental tone of feeling? The sense of touch may be so intense as to be painful, or, with decreasing intensity, it may awaken less and less response in consciousness until it may finally exist only in subconscious cerebration and exert its influence as in dreams, where the exposure of the body to cold air during sleep precipitates a dream of snowstorms or of icebergs. I can see no good reason for not believing that the organic sensations which exist at one time as pain, can likewise occur in less and less and still less intensity until it falls below consciousness and yet be active in the formation of that feeling which is known in consciousness as well- or ill-being, as comfort or discomfort, or, more properly, as a fundamental tone of feeling, which gives color to all mental operations.

It is not necessary that we should be conscious of the actual sensations of organic life in order to testify to their existence. From every cell and organ of the body there is a flood of sensations pouring in upon the brain, and especially is this true with

reference to organs participating in the vital processes of life. That they are unrecognized in consciousness as real sensations is no evidence against their existence, for, while their intensity, as a rule, is such that they do not rise above the threshold of consciousness as an acute sensation, yet their presence is amply vouched for in consciousness as a general sense of well- or ill-being, which may become at any time a definite organic emotion.

Itching, that is, an irritation of nerve filaments, is transmitted to the brain as a peculiar sensation. This sensation irritates consciousness and demands relief. But if the individual determines not to yield to the call for relief, or, indeed, is, by force of circumstances, unable to do so, the irritation directed toward and received by the brain is none the less intense; if, however, attention is so completely engrossed otherwise that the individual is wholly unconscious of the situation, are we to conclude that the irritation projected against the brain cells is any the less intense because consciousness is too preoccupied to give it heed?

Visceral conditions and organic states generally, furnishing, as they do, the material out of which emotions are fashioned, have more to do with mental states than we are inclined to believe, but the fact that the sense of bodily comfort; the organic emotion of fear; the depression of spirits; the moods; and all other mental states are known to us only in consciousness, and consciousness being associated in our minds exclusively with the *brain* has been the means of leading many an earnest seeker for truth astray. They have delved long and deep in this inviting but barren field, but hope and confidence have been so strong, and the quest has been so alluring, that many still believe that the pot of gold is buried at the rainbow's end and they have only to delve longer and deeper to secure the anticipated treasure; but so far as the emotions are concerned, or so far as it may involve the origin of emotional insanity, there is little hope for success.

"For these and other reasons," says Professor Ladd, of Yale, "the best evidence obtainable from pathological cases, when collected and sifted, appears surprisingly confusing and self-contradictory. Brain pathology has, therefore, furnished the common fund of cases from which the most diverse and even contradictory theories have drawn at sight their stock of so-called proof. It has been used as the careless and false witness upon

which either party, and all parties to the suit, could call for precisely the testimony desired." While this is only too true it is not the intention to claim for it too wide an application, for the evidences of brain pathology in abnormal intellectual states, as in idiocy, imbecility, dementia, and general paralysis, are at least sufficiently established to call for further investigation, but in the emotional insanities, I believe it is useless to longer probe the brain for a secret it does not hold.

PROPOSITION 4.—*That the organic emotion of fear has its origin in visceral conditions.*

While it may be universally admitted that fear, as an emotion, exists, the statement that the emotion of fear has its origin in visceral conditions, and not in the brain, may not be so readily accepted. True, the feeling known as fear is recognized only in consciousness, but whence arise the sensations which give origin to fear in the absence of any conscious knowledge of danger? If all feelings must originate in sensations, from whence come the sensations which produce the feeling of fear? Must they originate in the brain? Do organic sensations have no influence upon mentality? Are the relations existing between the body and the mind so remote and so indefinite that visceral conditions can have no effect upon psychical states?

I am slow to believe that morbid feeling must necessarily originate in a diseased brain. Is the depression and irritability that comes with hunger dependent upon the hunger of brain cells alone? Is it not due rather to the hunger of visceral cells sending their protestations to the brain, which reproduces them as a feeling of depression and irritability? Does the feeling of hopeless and intense fear which accompanies angina pectoris originate in the brain, or does it originate in the heart itself, the brain standing only as mediator or interpreter between the organic sensations and consciousness, just as it stands as interpreter between external sensations and consciousness?

Ladd, *Philosophy of Mind,* says: "In all intense or emotional forms of feeling the presence of factors that have their origin in the condition of the peripheral parts of the bodily organism is obvious enough. The peculiar modifications of consciousness in which strong anger, fear, surprise, grief, etc., consist are undoubtedly largely due to the condition into which the muscles, the

vasomotor system, and the internal organs of the chest and abdomen are thrown. Without using an unjustifiable figure of speech, we may say that these emotions are, to no small extent, feelings *of* the accompanying bodily conditons." "The emotions and passions have no centers in the brain," says Clevenger, "but arise in the body generally and later affect consciousness, as shown by your asking yourself why you grew so angry, why you should have done this, that, or the other impulsive thing."

I believe this proposition can be safely laid down: That if the brain could exist and perform its psychical function, separate and apart from the body, it would never know the feeling of fear. Dr. Lange, a Danish physician, first suggested that the organic conditions, with their various manifestations, are the primary elements in emotions, and that the emotion itself is nothing but the revelation of these things to consciousness. He says: "The nature of the interested organ determines the special character of the emotion which is produced, the intensity of the modification determines the agreeable or disagreeable tone of the emotions. The affective life is thus intimately related to the fundamental phenomena of organic life."

"The most careful observers have remarked," says Ribot, "that the emotional faculties are effaced much more slowly than the intellectual faculties. At first thought it seems strange that states so vague as those pertaining to the feelings should be more stable than ideas and intellectual states in general. Reflection will show that the feelings are the most profound, the most common, and the most tenacious of all phases of mental activity. While knowledge is acquired and objective, feelings are innate." And here he points unmistakably to the source of these feelings. "Primarily considered, independently of any subtle or complex forms which they may assume, *they are the immediate and permanent expression of organic life.* The viscera, the muscles, the bones—all the essential elements of the body—contribute something to their formation."

Fear is an instinctive emotion intended for the preservation of the individual, and must of a necessity spring from the vital processes of life itself. It cannot be dependent upon mentality; it cannot even be dependent upon the brain as the source of its origin. It must be equally active and efficient in man, with his

well-developed brain; in the animal, with a deficient brain, and in the amœba, with no brain at all, and in order to be so universally applicable it must reside in some tissue common to all, namely: Protoplasm.

Professor James has emphasized with great skill and in an interesting way that organic changes are not merely an expression of the mental state, but *that they are its material cause and support.* "What kind of an emotion of fear would be left," he says, "if the feelings neither of quickened heart-beats nor of shallow breathing, neither of trembling lips nor of weakened limbs, neither of goose-flesh nor of visceral stirrings, were present, it is quite impossible to think. Can one fancy the state of rage and picture no ebullition of it in the chest, no flushing of the face, no dilatation of the nostrils, no clinching of the teeth, no impulse to vigorous action, but in their stead limp muscles, calm breathing, and a placid face?"

There can be no purely mental fear. The consciousness or recognition of danger without any bodily reaction would not be fear at all, indeed, there would be no especial feeling present; there would be simply a perception. Quickened heart-beats, shallow breathing, trembling lips, weakened limbs, goose-flesh, and visceral stirrings, are the essential ingredients of fear, and there can be no fear without them. This trembling of the lips, and quivering of the limbs, and stirring of the viscera, creates the feeling; that is, we feel the stirring viscera and other phenomena and we call this peculiar feeling *fear.* Consequently, whenever there is this stirring of the viscera, etc., whatever the cause, we will experience this same feeling of fear, and these phenomena will always occur whenever there is an organic reaction to danger.

It has been contended by some writers that fear is but the mental expression of a recognition of danger by the mind, but such a position is scarcely tenable, for it presupposes the possession of a mental faculty. The fact is, if the feeling of fear was necessarily dependent upon a mind it could be felt by none of the lower animals, nor by man in conditions of imperfectly developed mentality, as in idiots, while, on the contrary, observation teaches us that this feeling of fear is more potent and more powerful in the lower animals and in idiots than in individuals with strong and active minds. The less dominating the mind may be the more

intense this fear. It is felt alike, save in intensity, by all classes and all races of men; by all species of animals; by the very lowest forms of animated existence; and this, too, under whatever name it may appear, whether as the instinctive repulsion of the amœba, the timidity of the animal or the dread and apprehension of the man. And this same fear, springing from "visceral stirrings," and morbidly increased by bodily disease, is the ground-plan and underlying principle of melancholia. In emotional insanity the architect and designer is some visceral disorder, the emotion is the foundation, and the subsequent delusion is the superstructure, giving form and outline to the whole.

"That the sensations of organic life," says Ferrier, *Brain and Mind*, "are represented in the cerebral hemispheres, directly or indirectly, is plain from the extraordinary influence which states of the viscera exercise on the emotional tone of the individual. Healthy states of the viscera produce pleasurable feelings, and morbid states of the viscera produce painful or depressing feelings. Visceral derangements are frequently the cause, and always the accompaniment, of melancholic depression."

If a man was all mind and possessed no body he would never know what it is to fear. If there is any good reason for believing that an angel is supremely and continually happy, it is that the separation from the body is complete, for the utter annihilation and eradication of fear would in itself be sufficient to make this earth a heaven and every inhabitant an angel of everlasting joy.

PROPOSITION 5.—*That organic fear is a primitive instinct and necessary for the preservation of the individual.*

Among these organic emotions no one stands out so prominently as fear. Hunger, fear, and sexual desire, are the three fundamental protoplasmic principles, and on these three hang all the law and the prophets of biology. Hunger assures the maintenance of life; sexual desire the reproduction of life, and fear the preservation of life. This organic, or instinctive, fear is inherent in protoplasm itself, and is older than the mind by millions of years. It is not the result of ethics, or of culture, or of education. It originated with the primitive cell, and to this one emotion, more than to any other, is due the preservation, not only of the individual, but of the race itself; and the fear of the single

cell is reproduced and multiplied a million times by the aggregation of these million cells in a single body. Preyer says: "It is altogether wrong to maintain that a child has no fear unless it has been taught him. It is native and associated with all new impressions and is associated exclusively with the idea of injury to the individual." Fear is natural, inasmuch as it is a provision of nature, and it is organic because it is inherent in the body cells.

The cause of the feeling of fear lies in organic sensations. It is the result of a reaction to danger on the part of body cells. The changes which occur in body cells in the presence of danger reach the brain as sensations, and these are represented in consciousness by the feeling which we call fear. That these organic sensations precede the feeling of fear is capable of demonstration. In the presence of sudden and unexpected danger the muscular recoil, the respiratory spasm, the constriction of the heart, and the universal thrill which seems to proceed from every individual cell in the body, is oftentimes experienced before we become conscious of the feeling of fear. In other words, the cellular reaction to danger in these cases is so pronounced, and so intense, that we are conscious of the sensations of reaction before the brain can translate them into a feeling of fear. And this is why the individual, during this momentary period of time, is seemingly paralyzed and makes no effort to escape. He recognizes that the entire body is permeated with strange and unusual sensations, but, until the brain reproduces them in consciousness as a feeling of fear, *he is unable to know their origin or what they portend.*

In the case of external sensations of danger coming through the special senses, there is some difference. In the reaction of body cells to internal danger we are unconscious of the source of the resulting organic sensations, and the mind can only translate them into the feeling of organic fear, without knowing what it dreads or where it will attack, but, in the presence of external danger, the mind cannot only recognize the source but can also comprehend the nature and extent of the peril. Consequently, there thus enters into the equation a mental faculty, judgment, which is not present in the fear arising from cellular reaction to disease.

When a man sees an object of danger, or hears of one, or even

thinks of one, this intelligence is conveyed through the sympathetic nervous system and every body cell is placed in a state of defense; this attitude of defense sends sensory stimuli to the brain and these are elaborated into fear. It is not the fear which causes the bodily condition—the intelligence of danger does this—it is the reaction of the body to this danger which causes fear. This bodily reaction to the presence of danger is as old as protoplasm itself. The mind, however, is able to detect external danger where protoplasm would not, and the function of the mind is to report either known or foreseen danger—the body cells will do the rest, and this "doing the rest" will produce the feeling of fear. That this is true is shown by the fact that, although the mind recognizes a danger, every result of this recognition is involuntary, whether it be the action of the heart, or of the lungs, or the characteristic muscular phenomena.

The bodily reaction to the presence of an external danger depends much upon judgment. If judgment can convince the body cells of their safety; can imbue them with a sense of security; then there will be no cellular reaction and consequently no fear, no matter how great the surrounding danger may be. But if the mind conveys this intelligence without the accompanying cellular assurance, the body reaction follows in spite of judgment, as during epidemics of disease or in panics; that is, if judgment acts at all in the latter instance. The facility, ease, and completeness with which this assurance can be conveyed, and the degree of conviction with which the body cells receive it, determines the individual's actions in the face of danger. A brave man is one whose judgment is able to perceive that the danger is more fancied than real, or, in the presence of real danger, can assure the body cells of their safety, and in either event he feels no fear.

Knowledge of external danger that is made known by means of sight, hearing, taste, or smell, must come by way of the brain, but this knowledge must be conveyed to the body cells before there can be any reaction to the danger and, consequently, any feeling of fear. It is not the influence of the mind on the body: it occurs with equal positiveness in animals without mind. The purpose of the mind in this particular is to detect more readily the presence of danger; more especially to convey the intelligence

of foreseen or possible danger to the body cells, and to devise additional measures for escaping its consequences. As the mind succeeds in devising means for averting the danger, bodily reaction diminishes, and as bodily reaction diminishes fear disappears, and caution, an acquired faculty born of judgment, takes its place. Fear is instinctive and, when strong, dominates intelligence; caution is acquired, and is an aid to intelligence. Fear is weakening, enervating, paralyzing; caution serves to steady and to strengthen. Fear is a product of the body; caution an evolution of the mind. A man preserves himself from harm by caution; an animal by timidity. And just as the mind or the body predominates; just as the acquired or the physiological function controls; just so will a man show caution or timidity in the presence of danger.

The brain, then, or the mind as its function, cannot originate the feeling of fear. Either of them can do no more than convey the intelligence of danger and, in some instances, an assurance of safety. If the mind really felt the fear before any bodily reaction had taken place, there never would occur such demoralizing results as follow the sudden alarm of fire, or occur during panics from any cause. It is in panics that we see the organic fear of the multitude so plainly in evidence. Every body cell in every individual, and every individual in the multitude, is blindly struggling for the preservation of life, as protoplasmic masses have ever struggled for existence since life began. In these instances few have any actual knowledge of the danger to be avoided, but they feel the fear, *and they feel it without any intellectual assistance.* If the mind originated the fear it would always be in due proportion to the degree of danger, which is not the case. The mind would perceive the real significance of the danger, and, where no injury could possibly occur, would prevent the origin of this fear, instead of trembling with apprehension, the while it was quite convinced no harm could befall.

The "nervousness," or "stage fright," or whatever it may be called, which attacks the actor, singer, or public speaker, is not the result of intellectual fear founded upon reason and judgment, but is this same organic fear, this same cellular reaction to fancied danger, and is absolutely beyond his control. It is the same organic emotion that causes the bird in the hand and the hare in the trap to tremble with apprehension. It is bodily, not mental,

in its origin, and is not subject to mental control. The mind would not voluntarily create a feeling which it could not control. If its creation is involuntary, it must have its origin elsewhere than in the mind. Mental acquirements teach us to be cautious; to avoid danger; to plan, or even improvise, new methods of escape, but they do not teach us to fear.

We are not taught to fear. It was implanted in the primitive nature of the first cell. It is not a product of education, except those centuries and centuries of self-instruction which protoplasm has experienced since the first dawn of life. Mentality, as it further develops, may acquire more and more control over this bodily reaction to danger, but protoplasm has not yet delivered its safe keeping into the hands of any acquired function, no matter how high the latter may rise in the scale of morality or intellectuality. Protoplasm is neither moral nor intellectual, but it has preserved its integrity through these millions of years without either morals or intellect, and the time has not yet arrived when it will unquestionably surrender itself into their care and keeping. In times of real danger protoplasm reacts, and it reacts exactly as it did a million years ago. Originally this reaction was simply a form of chemical repulsion, whereby elements without affinity were repelled. The chemical repulsion was the sum total of the phenomenon. But later, as the brain developed, this act of chemical repulsion was recognized in consciousness, and its association with the presence of danger became more and more evident. In the course of time, and because of repeated experiences, there finally came a mental reaction in response to the bodily reaction, and then whenever organized protoplasm reacted to the presence of danger the effect of such reaction was *felt* in mentality. Thus, the mental equivalent of the bodily reaction to danger was recognized in consciousness as a peculiar emotion which received the name of *fear*. And this fear, whether caused by bodily reaction to real or imaginary danger, or whether it be temporary or persistent in its nature, is the same fear, and produced in the same way, as the fear of the amœba would have been had it possessed, in addition to its protoplasmic reaction to danger, the power to *feel*.

The facility, ease, and completeness with which bodily cells react to danger depends upon habit and upon disease. The bodily

cells of some people react upon slight provocation and they are cowards in spite of all attempts to appear courageous; while the fearfulness and timidity of the sick man is the personal experience of most of us, especially if the illness is of such a nature as to implicate all the organs of the body, and at the same time not so overwhelming in its toxicity or intensity as to exert a paralyzing effect upon the sympathetic nerves, thus abolishing all sensory stimuli, or so benumbing in its action upon the brain as to prohibit its recognition of sensory stimuli or their elaboration into a conscious feeling. In the infectious diseases, as a rule, the action of the highly toxic blood upon the brain is such as to obliterate all consciousness of the bodily reaction to the danger, and no fear is felt, just as the melancholiac, during acute illness "forgets his fear," and is thought to be much improved mentally; or the delusion gradually disappears under the disintegrating processes of dementia.

Disease of the brain can prohibit the feeling of fear by a non-recognition of the sensory stimuli which produce it, but no disease of the brain can originate fear. An excessive irritability of the brain may exaggerate *normal* bodily reaction to danger, but this normal bodily reaction can only come in the presence of real danger and, consequently, will not be continuous. *A continuous feeling of fear can only come from abnormal bodily cells which are reacting to a disease whose toxicity is neither so overwhelming as to prohibit the reception of sensory stimuli by the brain, nor so acute as to awaken the attention of consciousness to the fact of its presence.* And this is why certain abnormal bodily states are so prone to precipitate a condition of melancholia, which would not follow or accompany the more intense manifestations of bodily disorder which are associated with the acute infectious diseases.

PROPOSITION 6.—*That abnormal organic fear is the basis of melancholia.*

Having shown the important relation existing between visceral conditions and mental states, and having endeavored to establish fear as an organic emotion having its basis in cellular sensations, it now becomes necessary to consider the relation which fear bears to melancholia and, consequently, what connection, if any, exists between melancholia and visceral conditions. Melancholia is a

condition of mind, characterized by a more or less intense feeling of abnormal fear, which may find expression in mild despondency, as in neurasthenia, or in a profound psychical depression, with or without agitation, as in emotional insanity.

Practically all the delusions incidental to melancholia cluster around the feeling of fear. Clouston enumerates the delusions of 100 female melancholiacs taken at random, and the character of these delusions plainly indicate how closely and intimately they are associated with this primitive organic fear. There are delusions of persecution; of suspicion; of being poisoned; of being killed; of being ruined; of being conspired against; of being defrauded; of being destitute; of impending death; of calamity; of the soul being lost; of having no stomach; that she is to be murdered; to be boiled alive; that she is in hell; being tempted by the devil; being possessed by the devil; having committed the unpardonable sin; fear of being hanged; fear of being tortured; fear of living forever; fear of taking food, and so on through a long list. Fear! Fear! Written in every lineament of the face and stamped upon every muscular movement. This is the heritage of the melancholiac. Struggling in an agony of fear with the nurses, who have become, by reason of her delusions, devils of destruction; shrieking for assistance to save her from a horrible death; plotting and planning to outwit her persecutors; stealthily secreting herself to await the coming of the mob; arming herself, if possible, determined to defend herself to the death; crouching in hidden and out-of-the-way places where she hopes to escape her enemies. Fear! Nothing but Fear! An emotion as primitive as life itself; founded upon organic sensations and bearing the most intimate relation to the fundamental elements of existence. Fear! An intense, abnormal, overwhelming fear. Learned men call it melancholia.

It is not to be wondered at that an organic emotion, which has preserved the race through all the vicissitudes of animal existence, and to which the individual, as well as the special organ, and, likewise, the single cell, have promptly responded whenever recognized, should find the same ready response whenever felt, no matter whether its origin be normal or pathological or whether the cause of its origin be fancied or real. Education has been directed toward the restraint of this unreasonable fear, as society is pleased

to call it, but despite all education and all culture it rises to the occasion in supreme moments, and proves itself more effectual in the preservation of the individual than any methods devised by reason or judgment. For this reason, it is not surprising that during its pathological manifestations, whether in the form of momentary panic, or in frenzy, or in the more permanent condition of melancholia, the individual should forget the lessons of yesterday, which taught brotherly love and self-sacrifice, and should revert at these times of greatest fear and apprehension to the original and eternal principle of self-preservation.

The effect of this abnormal fear upon the melancholiac does not differ, except in the period of time involved, from the effect of uncontrolable fear upon any other individual. The man or woman who stands paralyzed with fear, gasping for breath, with a sense of constriction about the heart, face pale, eyes wide open with terror at the sudden and unexpected sight of a garter snake, eighteen inches in length, which could by no possibility injure them, differs in no particular from the melancholiac who feels all this terror but must invent some external object as its source. There is no actual danger in either case, and the man, recalling his experience with the snake, will laugh at the incongruity of the situation; and so does the melancholiac, after recovery, laugh at the absurdity of his fears—but not at the reality of the experience. After the feeling of fear has disappeared both can realize the absence of an adequate cause, but both will repeat the experience under the same conditions.

Organic cells will react to danger, and in times of disease and visceral irritation they respond with less and less apparent provocation, until in some bodily conditions, a state of panic is readily produced, which will continue as long as the conditions which give it birth persist. Heredity, likewise, plays an important rôle in these states of fear. Some individuals there are who from birth have been abnormally timid; who scent danger from afar; who feel an element of peril in the slightest touch; who see death and disaster in every fleeting shadow. They react organically to every passing breeze of direful portent, and these organic sensations keep them continually on the *qui vive* for anticipated danger. In some, indeed, this organic reaction is so abnormally developed that they may at any moment be grasped in the clutches of uncon-

trollable fear without any external cause, and without any internal disorder, save the abnormal organic reaction itself. From these cases melancholia receives a long line of recruits.

The feeling of fear is so closely associated with the idea of danger, that its mere presence leads the individual to spontaneously take measures for protection; and if it is abnormally strong in the manner of its presentation it will find due recognition in consciousness, whether or not there exists any known cause for its presence. It has been recognized for so long a time, and has so seldom betrayed its trust, that the simple fact of its presence is, to many, incontrovertible evidence that danger is near, despite all appearances to the contrary, and the organic reaction finds a ready and willing ally in the intellect itself. Presentiments, and moods, and indefinite feelings of coming evil, have frequently taken possession of the man, but they have been mild and conciliatory in their manifestations, and, after a temporary occupancy, have, by means of counsel or cajolery, been dispelled. The absolute and all-compelling terror which takes possession of the man in melancholia is not to be dispelled so easily. On the contrary, it is so formidable in the method of its revelation, and so unquestionable in the manner of its conviction, that the intellect is enlisted in its cause and, instead of opposing its course, becomes at once its mentor and its friend. The degree of implication of the intellect depends upon the strength of the feeling and the success or facility with which reason and judgment can decide upon a possible cause or condition as the source of all this mental pain, for, until reason and judgment *do* adopt some object or condition as the cause, there can be no delusion, and the feeling remains vague and uncertain, though none the less real, until the physical conditions which gave it birth have passed away.

Fear! Fear for the self, the organic fear of protoplasm, is the essence and the all in all of melancholia. An abnormal fear which, in its very intensity, seems to be a reversion to the primitive instincts of protoplasm, and which sweeps away at a single stroke all the results of years of culture and education. A fear which drove the most timid wild animals to hide in gloomy caverns; which now drives many men unceasingly to wander up and down the face of the earth; which grips the heart, and blanches

the face, and, at times, makes abject cowards of us all. It is not a question alone of intellect or intelligence, but of organic reaction to the presence of danger, or to the irritability of body cells. It shows itself alike in the man who, without any reason for anticipating danger, is afraid to go out of the house at night, and the melancholiac who, without any good reason for so believing, is afraid to eat for fear of poison in his food, save that the latter has known no peace until he has evolved some *reason* for the fear he feels.

This disposition on the part of some to insist upon a mental reason for the fear which they feel, is the cause of delusions in melancholia. In neurasthenia the same feeling of fear is always hovering in the background, but in so mild a degree of intensity that the individual is content to regard it as a constant and annoying source of depression, without attempting to account for its origin, but in its more powerful manifestations the sense of impending doom is so convincing and so all-pervading, that reason herself is aroused to the seriousness of the situation and the necessity of taking some measures to save the individual from destruction.

It is at this point that the maneuvering of the intellect is first observed. Taking into consideration that this feeling of fear portends coming evil, and that it has hitherto possessed all the reliability of a primitive instinct, the intellect concludes that its mere presence may be conclusively accepted as evidence that something is going to occur. More than this, if the mere presence of the feeling of fear can be received as an indication of danger, then, the unusual intensity manifested in the present case can only indicate that the danger is not only near, but extremely serious in its nature. The fact that the mind, at this point, can neither touch, nor smell, nor taste, nor hear, nor see, any object of danger, leads only to temporary doubt, if any, for the presence of so much fear with no discernible object as its cause only suggests a new idea, and that is, that the danger is none the less real, *but that it will come in some mysterious and unusual manner;* and from now henceforward imagination runs riot through all the probable and improbable causes, until one is found which seems to fit into, not only the present conditions, but into the

temperament, teaching, and all the peculiar characteristics of the individual, and the delusion is born.

I have gone thus into detail because it is important to understand that the delusion in melancholia is the result of the exercise of both reason and judgment. It is not an idea which slips in, under the stress and strain of fear, only when reason and judgment have been abrogated by disease. The delusion comes in no clandestine manner. It is born of a necessity, it is true, but its origin is legitimate, and it is stamped by the seal of reason and stands approved by judgment. Were it not so, reason and judgment would not voluntarily rally to its support, nor defend it so strenuously against subsequent attacks. True, if judgment and reason are weakened and impaired they will be less critical in their choice of a cause, but if the choice is made; if a cause is finally adopted; the degree of intellectual refinement shown in its selection matters but little. The acceptance of some object or condition as the cause of the fear is the point. If the delusion is once born, it matters little what the conditions of labor may have been.

In the selection of a delusion in melancholia it should be no cause for surprise that it so frequently embodies the mysterious and undemonstrable, for, instead of indicating that the intellect has no part in its formation, it is additional proof that reason and judgment are involved in its creation. The fact that this feeling of fear can be accounted for in no ordinary way forces the intellect into the region of the mysterious for its solution. Besides, no average judgment would accept trivial and *palpably impossible* things as a cause. Reason would have to be weakened and impaired, indeed, for a man to accept the proposition that a certain tree in the yard was going to pull itself up by the roots and come into the house and hit him on the head; not that this proposition is too unreasonable alone, but that he can recognize, in the midst of all his mental turmoil, the transparency of the statement *because of his familiarity with trees and their limitations.* Thus it is that delusions will be found, as a rule, to have been gleaned from those sources with which the deluded one is least familiar for, while reason and judgment may be led astray by the pressure of circumstances, they will not voluntarily subscribe to self-evident error.

A deluded patient seldom formulates into a false belief such propositions as these: Black is white; eight times four is seventeen; the square on the hypotenuse is equal to a right angle. Such statements are too obviously opposed to reason and judgment. Instead, he selects a cause of which he knows little or nothing, or which might be true, and the nearer he comes to selecting something of which he has no real knowledge, or something which no one else can positively prove to be false, the more eagerly does judgment embrace it. If he finds the fulfillment of his fear in the conspiracies of enemies, which may or may not be true; or in secret societies, of which he knows little; or in electricity, of which he knows less; or in everlasting punishment by a God, of whom he knows nothing; or in the infidelity of his wife, which no one can disprove; or in anything else, which can not be demonstrated, the judgment encounters little difficulty in accepting it.

The position occupied by this feeling of fear, whether above or below the threshold of consciousness, depends upon its intensity. This much we know: That there is a present sense of well- or ill-being; that in its normal tensity it forms a fundamental tone of feeling, which is known as temperament; that we recognize variations from time to time, and we call these moods; that this feeling must have its origin in sensory stimuli; that the elaboration of these stimuli into feeling lies outside of consciousness; that these sensory stimuli do not arise from external conditions, for if they did we would be conscious of both the source of these feelings and the cause of every modification they might undergo. More than this, I believe we may safely add: That this fundamental tone of feeling has its origin in visceral conditions; that these visceral conditions determine not only the normal temperament of the individual but his moods as well; that by reason of certain general abnormal conditions of the visceral organs, this tone of feeling becomes exaggerated and abnormal, resulting in depression of spirits and a universal sense of ill-being, known as neurasthenia; that further increase in the intensity of this abnormal sense of ill-being eventually provokes the intellect to search for a cause; that this search for a cause develops a false belief; that this false belief finds its expression in language, and thus perpetuates both itself and the accompanying feeling in

memory, and that the adoption of this false belief begets new methods of thinking, and acting, which, in connection with the already present abnormal feeling, are resolved into a peculiar mental condition known as melancholia.

PROPOSITION 7.—*That melancholia is but the expression of abnormal visceral conditions.*

For myself, I can see no good reason why there should be any doubt about the origin of melancholia in visceral conditions, rather than in a disease of the brain. In pure melancholia, uncomplicated by dementia, I can see no such involvement of the intellect as to justify us in longer pointing the finger of suspicion at the brain. Disease of the brain will find its expression, if it finds it at all, in disorders of the intellect, not in any intensification of the emotions. Intensified emotions may find more freedom of action in the presence of impaired intellect, as in dementia, but, nevertheless, the emotion is the basic principle and the moving spirit in melancholia, and this emotion in itself would constitute melancholia regardless of the intellectual condition. In the idiot, in the dement, in one who is neither idiot nor dement, an abnormal fear is the same. In the presence of the intellect it takes on the additional characteristic of a delusion; in the absence of intellect it exists as a profound depression without any delusive significance, but in either event the emotional mental condition is due to this same organic fear.

One writer says: "Nutritive disturbances of the cerebrum being the principal causative factor (i. e., of melancholia) psychical distress and a sense of woe and uneasiness are the ways by which the brain expresses its lack of proper nourishment"; but this scarcely agrees with well-recognized facts in the case. In those mental conditions attended by the most pronounced insufficiency of brain nourishment, "psychical distress and a sense of woe and uneasiness" are seldom present. In no other condition of the brain can there be a greater deficiency of nourishment than in advanced dementia, but "psychical distress and a sense of woe and uneasiness" are not characteristic of simple, advanced dementia. Idiots certainly represent the most pronounced lack of proper brain nourishment, both before and after birth, but no one associates "psychical distress and a sense of woe and uneasiness" with this condition. Psychical distress may come from lack of

nourishment, but it is from lack of nourishment to organs outside the cranium. The brain cannot originate a feeling of psychical distress, nor of woe and uneasiness, no matter how adequate or inadequate its nourishment may be; it can only translate sensations into feelings, and, as it has no sensory fibers of its own, it can have no sensations of its own, and, consequently, no feelings which arise from, or originate in and of itself.

The brain has sufficient to answer for in the purely intellectual forms of mental unsoundness, that is, idiocy, imbecility, dementia, and general paralysis; and the emotional mental condition known as melancholia must be charged up to visceral conditions—not to the brain. Melancholia is due to, and is the outgrowth of, organic fear, and organic fear has its origin outside the cranium, for it was in existence long centuries before the cranium was formed.

The importance of the visceral organs, in any consideration of melancholia, cannot be overestimated—in fact, these bodily organs constitute the *Ego* itself. Ribot, *Diseases of Memory*, says: "It would seem, according to this view, that the identity of the *Ego* depended entirely upon the memory. But such a conception is only partial. Beneath the unstable compound phenomenon in all its protean phases of growth, degeneration, and reproduction, there is a something that remains; and this something is the undefined consciousness, *the product of all the vital processes*, constituting bodily perception, and which is expressed in one word—the *cœnæsthesias*. All observers are agreed that the early development of mental disease is indicated, not by intellectual disorder, but by changes in *character—changes which are only the psychical expression of the cœnæsthesias.*" That is, character is the product and outgrowth of the body, not of the mind. It is the result of vital processes and not of mental operations. He goes further: "So an organic lesion, often ignored, may transform the cœnæsthesis, substituting for the normal sensation of existence a condition of melancholy, mental distress, and anxiety, of which the patient is unable to discern the cause. This bodily condition, which is without the sphere of consciousness, because of its perpetuity, *is the true basis of personality*—ever present, ever-acting, without repose or respite, it knows neither sleep nor exhaustion, lasting as long as life itself, of which, indeed, it is only an expression."

How can melancholia, which is unquestionably an emotional condition, have its origin in the brain? There is no source of emotion there. Maudsley says: "So long as man has organic viscera he will have emotion enough, whatever his beliefs or disbeliefs may be." And it is true that the emotions and the intellect have little in common. I quote again from Maudsley: "In truth these organic efforts of the physiological consensus of organs *determine at bottom the play of the affective nature;* its tone is the harmonic or discordant outcome of their complex interactions; *the strength of the force which we develop as will and the emotional color in which we see life have their foundation in them.*" Again, "Injury to the head and gross disease of the brain tend to cause intellectual rather than emotional disorder, *while abdominal disease favors the occurrence of emotional depression;* the organic conditions of the intellect being, as Müller remarked, mainly in the brain itself, and the elements which maintain the emotions or strivings with self, in all parts of the organism. It is clear as day that temporary bodily conditions, however they may have been brought about, will play their part; and it may well be that future researches will discover the causes of the characteristic features of some varieties of mental derangement in the diathetic states and the actual bodily disorders which are associated with them. Without any change whatsoever having taken place in his external relations, the presence of bile in his blood shall drive a person to regard his surroundings and his future in the gloomiest light possible; carry this morbid state of nervous element to a further stage of depression and make it last, there ensues the genuine melancholia of insanity. There is the most perfect harmony, the most intimate connection or sympathy, between the different organs of the body as the expression of its organic life, a unity of the organism beneath consciousness, and the brain is quite aware that the body has a liver or a stomach and feels the effects of disorder in any one of the organs, without declaring in consciousness the cause of what it feels."

Melancholia must be regarded as a psychical expression of organic fear; a mental state due to visceral conditions. It has long been conceded that melancholia was the most curable form of insanity; in fact, it has been almost the *only* curable form of insanity, but the reason why has only recently begun to dawn

upon us. In the medical treatment of insanity we have regarded all forms of mental disorder as due to disease of the brain, but all our treatment has been directed elsewhere. We have known, and acknowledged covertly, that if it was true that insanity was due in every instance to disease of the brain, all treatment would be useless. Consequently, the course of treatment adopted was directed to the correction of bodily disorders. Attention was given to the stomach, the liver, the heart, the kidney, the blood, the lung, the skin, the bowels, and general systemic conditions. There is no special treatment for insanity, that is, there is no medicine for the mind, and little for the brain, because in those forms of insanity due to disease of the brain the very nature of the latter condition precludes recovery from any method of treatment.

It was noticed, however, that by virtue of the treatment employed in hospitals for insane a certain number recovered, many more improved, only to relapse, and in a large number there was no improvement except of the most temporary kind. Year after year passed by with the same methods of treatment employed and followed by practically the same results. After a time it was thought worth while to investigate the matter a little and it was discovered that practically all the cases of actual recovery were those of pure and uncomplicated melancholia, while the incurable were made up of imbeciles, epileptics, general paralytics, paranoiacs, and dements—especially dements.

This opened up a field for study. If all forms of insanity were due to disease of the brain, and the same method of treatment was employed in each case, why should all the melancholiacs recover and all the rest refuse to do so? It was evident that some feature of the matter had been overlooked, and the question arose: Is it possible that all forms of insanity are *not* due to disease of the brain? The results of the investigation and study carried on in response to the above query are embodied in this and a former paper, "Is Delusional Insanity Due to Disease of the Brain?"

Melancholia and dementia do not differ in their curability because dementia is due to a disease of the brain that is *not* curable and melancholia is due to a disease of the brain that *is* curable. No curable disease of the brain ever produced insanity. But, if

such a condition *did* exist, curability and incurability is not the only difference between dementia and melancholia. Dementia is a mental condition implicating the intellect, while melancholia is a mental condition involving the emotions. Is it not possible that due consideration of this proposition may be of some service in the solution of the problem? Drugs, whatever their character, can have no direct effect upon mental states. There is no medicine for the mind *per se*. If any effect upon mental conditions is to be obtained by medical treatment it must be indirectly. It must be applied to the source of the disorder. It must be directed to the organ or organs from whence the mental state emanates. Treatment for melancholia and for dementia must be equally effective if the two conditions flow from the same source. Treatment for disordered intellect and for disordered emotions must find a similar response if both conditions draw their sustenance from the same organ.

Then why do melancholiacs recover, while imbeciles and dements do not? Melancholia is a true emotional disorder; dementia is a true intellectual disorder. If the method of treatment employed relieves the emotional disorder but does not relieve the intellectual disorder, is it not possible that the treatment used reaches the seat of the disorder in melancholia more effectually than it does in dementia? May it not be true that treatment directed toward the bowels, or stomach, or liver, or heart, or kidney, or skin, does not produce any important or lasting impression upon a diseased brain, but may be quite efficacious in the relief of visceral disorders themselves? It is here, I believe, that we will find a solution of the problem, namely: That the intellect and the organic emotions do not have a common origin. That, while emotions are recognized in consciousness, and thus become associated in thought with the mind, and finally with the brain, they have their origin in visceral conditions. If thought and feeling both originated in the brain, then disease of the brain must produce both disorder of intellect and disorder of the emotions simultaneously, but, quite to the contrary, we have disorders of intellect, as in imbecility or dementia, without disorder of the emotions, and disorder of emotion, as in melancholia, without disorder of intellect. Imbeciles and dements can hate, and desire, and fear, even when the mind is so impaired as to be un-

able to give any intellectual expression to the emotions felt; and melancholiacs, while, apparently, so completely absorbed in their morbid feelings as to be indifferent and unconcerned regarding all external objects, are quite wide awake to their surroundings as they will tell you after the attack has passed away. In pure melancholia the intellect is in no way involved, except in the furtherance of the morbid design, and when, during an attack of melancholia, any intellectual involvement is observed, it is safe to conclude that the patient has both melancholia *and* dementia.

If idiocy, imbecility, and dementia are due to disorders of intellect; and melancholia is due to disorder of emotion; then we must logically conclude that dementia and kindred mental conditions have their origin in functional or organic changes in the brain, while melancholia originates in functional or organic diseases of the viscera, for emotion, the organic emotion of fear, is the underlying principle in melancholia, and in whatever part of the bodily structure organic fear has its birth, *there* will be found the seed-bed of melancholia. Here is the secret of success in the treatment of melancholia and it explains the mystery over which so many of us have so long pondered, and the only source of wonder remaining is, that while we theoretically held to the fact that all abnormal mental conditions were due to disease of the brain, a position from which, until recently, we would withdraw under no consideration, we were led miraculously, or, perhaps, instinctively, to direct our treatment to the real seat of the disorder, and that, too, in the one especially curable form of insanity.

In the consideration of insanity we must now recognize two forms of disorder, namely: Intellectual, having its origin in disease of the brain; and emotional, having its origin in diseases of the viscera. True, all injuries and diseases of the brain do not lead to intellectual disorder, nor do all diseases and injuries of the viscera lead to melancholia, but, whatever the special cause from which they spring, intellectual disorders *must* be referred to the brain and emotional derangements to the viscera.

It may be well to add in this connection, what will be readily observed, however, that, while there are intellectual disorders and emotional disorders, and while a patient may have either one or the other in a pure and uncomplicated form, yet there is, at the same time, nothing to prevent or disqualify the patient from

having both an intellectual and an emotional disorder at the same moment, without them bearing any intimate relation to each other, and without either being regarded as a symptom of the other. Bearing in mind the source of origin of each, there is little difficulty in understanding why they can both exist independently, or both exist in the same individual at the same time, without implicating each other, or of either being misinterpreted as bearing the relation of cause or effect to the other. A dement may have melancholia, or an imbecile may have melancholia, just as a man who is neither a dement nor an imbecile may have the same emotional disorder, or just as anyone else, sane or otherwise, demented or otherwise, who possesses viscera, may have melancholia. It is simply a question of visceral conditions and not of intellectual order or disorder.

Probably 70 per cent of all patients admitted to hospitals for insane are subjects of some intellectual disorder, either idiocy, imbecility, or dementia in some of its forms. All incurable. The remainder are divided between toxic insanity, manic-depressive insanity, and melancholia, with prognosis good in nearly every instance. The reason that many cases of melancholia prove to be incurable is because we fail to discover in these patients another condition than melancholia hovering in the background. I have said that there is nothing to prevent a dement from having melancholia, and if this dement is admitted to the hospital during this attack of emotional disturbance, as they frequently are, the latter condition quite naturally occupies the foreground, and the patient goes on record as a case of melancholia. In a week, or a month, or in six months, the patient recovers from the emotional disorder and then, the truth not yet having been discovered, the case is branded *secondary dementia,* and, not only this, it is ever afterward referred to as secondary dementia *following melancholia.* It may not be out of place to remark here that in all probability dementia is in every instance primary in its origin, so far as its relation to any other mental condition is concerned, and I am slow to believe that any case of melancholia ever had secondary dementia as a sequel. If dementia becomes observable upon the disappearance of melancholia it may be safely taken for granted that the dementia has been present all the time, or that, if it *has* developed in the mean-

time, it has done so independently of the melancholia. If dementia is secondary to anything it is to the brain disease or malnutrition which gave it birth, for it bears no such relation to any emotional disorder which may precede or accompany it. This may seem to be a radical view of the matter but close observation will verify, I believe, the position taken.

In conclusion I can only reiterate what has been already laid down, for if organic fear has its origin in visceral sensations, and if melancholia is a mental condition arising from a state of abnormal organic fear, then melancholia must of a necessity have its origin in abnormal visceral conditions.

A PRELIMINARY REPORT OF THE GYNECOLOGICAL SURGERY IN THE MANHATTAN STATE HOSPITAL WEST.*

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Modern psychiatric science, my alienist friends tell me, has undergone many changes within a comparatively short period of years. Aside from new classifications and advanced modern methods of treatment applicable to all, the necessity of individualizing—of treating each patient according to his or her especial needs—is becoming strongly impressed upon those responsible for the welfare of large aggregations of insane people. The value of the study of the individual and of the rendering of such physical assistance as may be needed with each patient is shown in the higher percentage of mental recoveries in the various institutions, and in the more contented and useful community of each.

This is exemplified strongly in the present method of treating the tuberculous insane by isolation, protecting thereby the remainder, and in the tent life and the properly constructed, airy wards for the direct treatment of the tuberculous unfortunates themselves. What an advance over the old custom in which nothing of note was done for the protection of the rest of the patients or toward decreasing the mortality of those already infected.

This same spirit of advance can be noted along all other lines, and the insane patient of to-day is treated as one who, though by the laws is confined with others of like disease, is however, subject to physical diseases and abnormalities which are now being sought out and remedied wherever they interfere with the general health of the individual. If from the improved physical state as a result

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of this line of procedure, the mental status of the individual is benefited, the result is doubly gratifying.

To be in a position to treat such pathological conditions in a proper surgical manner, Dr. Emmet C. Dent, as Superintendent of the Manhattan State Hospital West, in 1902, requested that I should take charge of the gynecological surgery of that institution and add to the equipment already on hand such necessaries as should place the facilities for modern surgery on a plane equal to that of other general hospitals. Through the far-sighted liberality of the State Board of Commissioners and the hearty endorsement of Dr. Dent this has been done, and this hospital is to-day equipped for surgery of the most advanced character.

Before the report of the gynecological surgery done in this institution is considered, it will be of interest to review what is being done elsewhere, and to note the frequency of the existence of pathological pelvic and abdominal conditions among insane women.

Ripping states that in the asylum under his charge in Germany thirty-three per cent of diseased pelvic organs were found in one hundred consecutive autopsies.

Hergt speaks of almost sixty-six per cent of diseases of the sexual organs of women being found in the autopsies for two years in the Heidelberg Institute.

Isabella Davenport, of the Illinois Eastern Hospital for Insane, states that during 1898 to 1900, 431 female patients were admitted; of this number 387 were examined gynecologically and 361 pathological pelvic conditions were found. Danillo reports 69 per cent out of 200 patients examined, Rohé reports 74 per cent, Manton reports 81 per cent out of 100 patients examined. Hobbs reports 93 per cent. Piqué, surgeon to the Alien Hospitals of the Department of the Seine, reports 89 per cent. Anna Hutchinson, of the Manhattan State Hospital West, where my operations on the insane are being done, reports that during the year ending October, 1904, 700 women among the admissions of that year were examined by her; 543 or seventy-seven per cent had pathological pelvic or abdominal conditions.

This large percentage of physical abnormalities existing in the sexual organs of the women inmates of the insane asylums throughout the country cannot be said to indicate that 75 to 80 per cent of such patients have given birth to children, and that these departures from the normal state are the result of parturition. As an evidence that this is not true, during the last sixteen years there have been admitted to the Manhattan State Hospital West, almost thirteen thousand women of whom forty per cent were single and sixty per cent married. Many abnormalities are, however, the result of child-bearing, and cause, by their neglect in many instances, suffering and a train of nervous disturbances undermining the general health of the patient.

For the better understanding of the physical necessity of relieving the pathological pelvic and abdominal disturbances in women, let me cite in brief a few prominent symptoms and conditions following in the train of each class.

Fibroid Tumors of the Uterus.—At times contant pain; hemorrhages; malignant degeneration; disease of the kidneys by pressure on ureters; sloughing.

Ovarian Tumors.—Constant pain; malignant changes.

Purulent Diseases of Tubes and Ovaries.—Constant marked pain; incapacity for physical effort; invalidism; death.

Tears of the Cervix and Perineum (severe) and Displacements.—Well-marked nervous disturbance, irritability, hysteria, backache on slight exertion.

Endometritis.—Irritability; pain.

It will be seen that all of the above conditions give rise to symptoms of sufficient gravity to cause women in the ordinary walks of life to seek assistance and to be willing to undergo surgical operations for their relief. The same relief is now recognized as the right of patients confined in insane asylums, and as a result they are being made, when it is given, happier and more contented members of the community in which their unfortunate mental state has placed them. Of such importance is

the rendering of physical assistance to insane patients esteemed in France, that a large, well-equipped surgical pavilion has been for some years erected in connection with the department of the Seine. To this pavilion all patients needing surgical treatment are sent from the four asylums, St. Ann, Vaucluse, Villejuif and Ville Evrard.

It is hardly necessary to speak in detail to the members of this Association of the operations of Manton in the Eastern Michigan Asylum, or of Hobbs in the London, Ontario, Asylum, or of the late Dr. Rohé in the Second Hospital for the Insane of Maryland. The work of each is a matter of record and one familiar to all—nor is it necessary to remind the Association of the unrelenting stand taken by Dr. Russell of the Hamilton Asylum of Canada in opposition to the views advanced by Rohé and by Hobbs.

The operations of Rohé were done with the sole view of influencing the mental state of the patients. They were thirty-four in number. An ablation of the tubo-ovarian adnexa was done in thirty-two instances. It would seem that a diseased state of the tubes and ovaries was not a prerequisite for their removal among the cases operated on. The indications for operation with him were hallucinations referable to the pelvic organs, and which were accentuated at the menstrual epoch. He reported eleven mental cures and nine mental ameliorations. The views of Rohé were unreservedly condemned by conservative alienists and surgeons.

It is only necessary to quote an extract from a paper of Dr. Alexander Skene, read before your association in 1902, to indicate the opinion of all gynecologists upon this subject. He says, "The slow destructive action of the ovaries prepares the organization as it were, for the menopause and at the same time occupies the nervous system with disturbances, which come from diseased ovaries, and hence their removal is a relief to the nervous system, whereas the removal of the normal ovaries is, figuratively speaking, an outrage to the nervous system which often overwhelms it."

Raimann in the *Chrobaks Festschrift* of 1903, presents an extensive article, "On the Causal Relations between Female Affections and Mental Disturbances." He reports in full eleven cases

in which the hallucinations were referable to the pelvic organs and accentuated during menstruation. In all the tubo-ovarian adnexa were removed though in some instances they were not diseased. There were no mental cures; in three only was there any diminution of the previous hallucinations and in these the mental improvement was only slight.

The results reported by Raimann are in accord with what would have been anticipated from a gynecological standpoint. It is contrary to all surgical experience to expect that the removal of the normal ovaries and tubes in a woman during her active sexual life can result other than disastrously to the nervous system even in women having no mental alienation—how much more so with those who have a weakened nervous potentiality as Tomlinson admirably expresses it, or in those already insane.

In some instances the mental recovery of patients is hastened by the physical relief experienced, when an operation that is needed has been performed. Of this there is no question since there are well authenticated reports of such instances from many hospitals. The operation has not, other than in exceptional instances, been the means *per se* of the patients' mental recovery. It has, however, restored the patients' physical health, by the restoration of which the patient is able to profit to a full extent by the moral and therapeutic treatment given her in the institutions.

The gynecological surgery at the Manhattan State Hospital West has been done with a view of improving the physical condition of the patient only. In every instance the relief of the local condition alone and the ordinary symptoms resulting have been considered; no cognizance has been taken of the mental state excepting as it precluded for the time any form of surgical operation. In other words, no operation has been done with a direct view of its possibly affecting favorably the mental disease for which the patient has been admitted to the hospital.

While the relief of the physical suffering alone has been the object of these operations, the subsequent progress of the mental disease of these patients has been carefully noted with a desire to determine, if possible, whether the improvement of the general

health through the operation has exercised a beneficial effect on the favorable progress of their mental state.

Reliable conclusions upon this question are extremely difficult to draw, since so many other factors enter into the mental improvement of patients.

Deductions to be decisive should be drawn from the result of systematic surgical work, extending over many years. In tabulating my own operations I have arranged them under three heads in order to better to analyze them. As stated, no operations have been undertaken with the direct object of influencing the mental status. The physical status alone has been considered. As a result of adopting this course fully three-fourths of the patients operated on were sufferers from forms of mental disease recognized as unfavorable and for whom little can be expected in the way of ameliorating their mental state.

The unfortunates of this class had, however, as much claim for physical relief as those with more amenable forms of mental disease.

The three classes into which I have divided these operations are: Major Operations which include all abdominal sections. Operations for displaced uteri which include also, when present, a repair of cervical and perineal injuries; finally, Minor Operations, including a restoration of injuries of the vagina and cervix and uterine endometrium.

These divisions have been made, since it has been claimed by some, notably Rohé and Hobbs in the report of the results of their operations, that the greatest mental improvement has been noted in those operations involving the removal of diseased adnexa. Some authors also express the opinion that malpositions of the uterus are of considerable importance in the mental disturbance of women, while others believe that such conditions have very little bearing on their mental state.

The daily population of the female division of the Manhattan State Hospital is about 2500 patients. The yearly admission of new patients is between 900 and 1000. As revealed by the pelvic examination of these patients admitted, fully seventy-five per cent

have some form of pelvic trouble. Operations have been done only in instances where the patient's life was imperilled, or to remove tumors, or in instances where the condition was such as to give rise to constant pain and ill health, or to a train of nervous symptoms.

Two hundred and forty-two patients have undergone some form of gynecological operation which is a little less than 5 per cent of the total number of women in the hospital during the period covering the operations. Of those operated on there have been sixty-two abdominal sections, fifty-one operations for displaced uteri and one hundred and twenty-nine minor plastic operations.

As a result of all the operations done (242) one hundred and twelve patients have been physically benefited in a marked degree, one hundred and seven have been noticeably improved, though not to such an extent as in the previous number.

Of the remaining patients five died, of which number two deaths were attributable to the operation and three to natural causes.

When we bear in mind that in no instance was the mental condition of the patient made worse, either directly or indirectly as a result of the operations, the importance of rendering such surgical assistance as is needed to these unfortunate members of our society becomes evident. In some instances lives have been saved; in others, patients who had been bed-ridden or semi-invalids for a long period of time, were restored to excellent physical health. With the exception of a very small percentage all were made more useful and contented members of the community in which they live.

The statement made by some writers that operative measures for remedying diseased conditions at times aggravate the insanity of the patient is not in accord with my experience. No instance of such aggravation exists among patients I have operated on. The same statement is made by Manton concerning his own operations in the Eastern Michigan Asylum covering a period of twenty years, and by Picqué who has been operating for twelve years among the insane of Paris.

The collection of one hundred and nine operations brought together by the Italian alienists, Angelucci and Pierraccini, in which they state that twenty-three patients were made mentally worse I cannot analyse, having been unable to obtain the original article. If, however, these operations deal with castration for the cure of insanity, and I infer that this is the case, since the article seems to have been inspired by the widespread attention brought to this subject through the publications of Rohé and of Hobbs, it can readily be understood that the removal of comparatively normal ovaries could accentuate the psychoses of these patients.

The rare occurrence of true psychoses following gynecological operations upon women not previously insane, has been brought out by Rohé in the *New York Medical Journal* of October, 1893. Here he states that as a result of communicating with all the asylums of the United States and Canada he found that in the course of the ten years prior to 1893 only twenty-five patients had been registered in all of these asylums, as having become insane after gynecological operations.

Kelly in his "Operative Gynecology" states that in an experience of something over two thousand abdominal sections he has had eight patients who have become insane after operations. Piqué who has devoted much attention to this phase of insanity, draws a line between intoxication psychoses as the result of sepsis, the ænesthetic, alcohol, or iodoform so largely used some years ago, and true psychoses following operations.

He gives as his experience that the latter class includes only old people in whom the senile change in the brain is taking place, or those mentally weak in whom there exists an intense fear and dread of operations.

This opinion, as expressed by Picqué, appears to be that of most alienists of the present day. The only cases of insanity following operations coming under my care have been those of septic origin in which a relief of the sepsis has brought about a slow but steady improvement in the mental state.

The late Dr. Bucke, Superintendent of the London, Ontaria,

Asylum, presented in a paper before your Association at its meeting in 1900 a full report, up to the time of his writing, of the gynecological operations of Hobbs in that institution. This report included two hundred patients.

The results were from a mental standpoint: 83 women recovered, 45 women improved, 68 women unimproved.

Of sixty-three general surgical operations he reports only one patient recovering mentally. In analyzing the different characters of gynecological operations and their effects, he finds that the largest number of mental recoveries have been among those on whom operations were done for diseased ovaries and tubes; next in order he ascribes importance to relief of diseases of the uterus, and last, to relief of injuries to the pelvic floor.

Piqué in his "Surgery among Aliens" cites eighteen selected cases of his own, of which he reports ten mental recoveries and four mental improvements. In examining his report he does not show any larger number of improvements as resulting from removal of diseased uterine adnexa, in fact the greater number follow a cure of an endometritis with an eroded and lacerated cervix.

In studying the histories of the patients upon whom I have operated I find that of the two hundred and forty-two patients one hundred and thirty-eight still remain in the institution and one hundred and four have been discharged. Of those discharged forty-three are recorded as recovered mentally. Twenty patients of the forty-three discharged as cured have had their mental recovery materially hastened as a result of the physical improvement arising from the operations done upon them.

While in the majority of these patients there had been some mental improvement before the operation was done, yet in all of the twenty of which we speak the psychic improvement following the operation was marked, as also was the steady progress toward recovery.

I would not have it inferred that this change for the better was an immediate result of the operation. Such could not be expected, nor did it exist. The marked improvement commenced

generally at the time that the patient began to experience her physical improvement and the relief from her former pelvic or abdominal discomfort.

In this connection it is of value to note the moral effect of the operation. In not a few instances during my operations in this hospital patients in need of surgical work would be transferred from other wards to the hospital ward in such an excited state that it would be a question whether the operation should be done on account of the possibility of the patient injuring herself while recovering from the operation. If the physical condition was of sufficient gravity to warrant us in disregarding the mentally excited state, the operation would be done and sufficient nurses supplied to protect the patient. In not a few of such conditions it was surprising to find that additional nurses were not needed, since the patient had at once become docile, free from all excitement, and showed a willingness to do everything she was told. None of these patients, however, were among those discharged as recovered, hence it cannot be stated that the mental benefit accruing was a moral one.

The diagnosis of the form of the mental alienation of the twenty patients whose recovery appeared in a great measure to be due to an improved physical condition as a result of the surgical operation is as follows: Melancholia, chronic in 5 patients; melancholia, acute in 7 patients; mania, acute in 4 patients; dementia, primary in 4 patients.

It is seen that the beneficial effect of a surgical relief eventually resulting in a mental recovery is confined in my own experience to those patients whose mental disturbance might be largely influenced by the presence of pathological conditions.

Through the earlier reports of operations that were done for the relief of insanity, the opinion among asylum physicians became prevalent that such efforts involved the removal of the tubo-ovarian adnexa of patients, and that a disease of these organs was not a necessary prerequisite. As a result a strong opposition was created among the physicians in charge of these institutions against all gynecological work, and it has only been within a

comparatively few years that this opposition has given way under the influence of a correction of this inference.

Among my own operations it has been my effort to preserve one or both ovaries if consistent with the physical welfare of the patient. This course has been followed, in accordance with the now well established fact in pelvic surgery, that leaving even a part of an ovary, provided that part is in a healthy state, so modifies the necessary phenomena of the menopause as to relieve the patient of many of the more acute and depressing symptoms attendant thereon.

From among the sixty-two abdominal sections performed for various pelvic and abdominal disorders seven had their mental recovery hastened through the beneficial physical effect of the operation. The character of these operations is as follows:

2 myomectomies with suspension of the uterus, mental diagnosis, melancholia chronic and mania acute.

2 suspensions of the uterus in one of which the right ovary and tube were removed. Mental diagnosis, melancholia acute in both instances.

2 supravaginal hysterectomies for fibromyomatous tumors of the uterus, both ovaries and tubes were removed in each instance. Mental diagnosis, melancholia chronic and dementia primary.

1 Bassini's operation for inguinal hernia. Mental diagnosis, melancholia chronic.

It will be seen that the beneficial mental effect is not confined to abdominal operations of any especial character. In five of these cases the ovaries and tubes were not diseased except in one instance, necessitating the removal of one ovary. In two it was necessary on account of disease to remove ovaries and tubes together with the tumor.

These results are not in accord with those obtained by Hobbs of the London, Ontario, Hospital, who states that the best results obtained in that institution were in operations on the uterine appendages. Especially is this difference perceptible when in examining the total number of abdominal sections it is seen that

in twenty-three instances both tubo-ovarian adnexa were removed for disease, in only two of these were there mental recoveries.

Not being an alienist, I hesitate to venture an opinion on this subject. I am, however, in full accord with the opinions of Tomlinson, that the mental benefit accruing is not dependent on the character of operation done, but more upon the nervous potentiality of the individual patient and her ability to respond to the stimulus of increased physical health.

It matters not by what character of operation or by what other means the physical well-being of the patient is restored.

Of the one hundred and twenty-nine plastic operations, ten of those discharged as cured began to give evidence of rapid mental improvement after recovery from the operations. While there was some improvement before the operations the rapid improvement was, however, subsequent.

The only legitimate conclusion to be drawn is that the improvement was due to a relief from the previous ever acting, depressing, nervous disturbances resulting from these injuries. The characters of these operations were the repair of a torn perineum, together with a diseased cervix, and the cure of an endometritis.

The forms of mental disease were: Melancholia, acute in 4 patients; melancholia chronic, in 2 patients; mania acute, in 2 patients; dementia primary, in 2 patients.

Of the fifty-one operations for displaced uteri associated with a repair of the cervix and perineum where indicated, three patients had their mental recovery hastened by the correction of the pelvic abnormalities.

Upon two of these patients a curettage and a shortening of the round ligaments by Alexander's operation was done, upon a third the peritoneal cavity was entered through an anterior vaginal incision and through this opening the round ligaments were shortened; the torn perineum was also repaired.

The mental condition of these three patients was mania acute, melancholia chronic, and dementia primary.

The length of time in which I have been conducting these operations is too short to draw conclusions of very great value.

Such systematic work must extend over a number of years before positive lessons can be learned. Operations done in most of the hospitals other than by Manton in the Eastern Michigan Hospital and Picqué in the splendid surgical pavilion of the asylums of the Department of the Seine, and in the Manhattan State Hospital West, are of a character too transitory to permit of drawing conclusions which we can feel are not subject to future modifications.

There are, however, some facts which I regard as well established.

1st. If the operation when needed has been properly done and the patient is not mutilated by an uncalled-for castration the mental condition is never aggravated by such a procedure. This, as stated, has been the experience of Manton who has been operating for over twenty years; also that of Picqué whose operations have extended over a period of twelve years, and of myself in the entire range of my surgical work among the insane.

2d. There exists among the patients confined in the various insane asylums many pathological conditions which can and do give rise to symptoms detrimental to the patients' physical well-being and mental recovery. Those, with such conditions, have a right to be given relief irrespective of their mental state.

3d. Under the stimulus of the improved somatic state resulting from surgical relief some of the patients show greater mental advancement under the moral and therapeutic care than were shown before such relief was given. At times this improved mental state continues to one of recovery.

The primary object of surgical operations upon the insane should be to improve the physical status of the patient with one end only in view, of relieving them of physical suffering and nervous disturbances.

If as a result of this relief they are mentally improved, it is a sequel not primarily sought, yet welcomed.

MAJOR OPERATIONS

Admission	Name	Age	Social condition	General health before operation	Mental diagnosis	Duration of mental disease previous to entering hospital	Pelvic condition	Date of operation	Operation
6-28-02	9540 B. H.	32	M.	Fair	Mania, acute	2 wks.	Multiple fibroids of uterus	9-26-02	Supra-vaginal hysterectomy
10-14-02	9829 S. G.	44	S.	Poor	Melancholia, chronic	3 to 4 yrs.	Retroverted uterus with small fibroids	10-30-02	Curettage, myomectomy, ventral suspension
2-23-03	10141 H. L.	21	M.	"	Melancholia, acute	2 days	Double adnexal disease, retroversion, adhesions	3-4-03	Intraabdominal shortening of round ligaments; right tube, and ovary removed
2-12-03	10120 M. S.	39	M.	Fair	Dementia paralytica		Ovarian cyst and retroflexed uterus	5-7-03	Removal of cyst and suspension of uterus
5-29-03	9453 N. G.	30	S.	"	Melancholia, chronic	3¼ yrs.	Retroversion with adhesions	8-12-02	Double salpingo-oophorectomy; suspension of uterus
8-24-01	8862 H. W.	43	M.	"	Melancholia, acute	3 to 4 wks.	Right inguinal hernia	11-30-02	Bassini's operation
10-30-02	9869 C. G.	40	S.	"	Melancholia, chronic	2 yrs.	Retroflection with fibroids	2-26-03	Myomectomy; Bissell's operation
10-12-01	8968 B. R.	54	W.	"	Dementia paralytica	4 mos.	Umbilical hernia	3-19-03	Repair of rupture
2-27-03	10152 M. F.	28	"	"	Melancholia, chronic	3 yrs.	Retroversion and ovarian cyst	4-9-03	Curettage, anterior vaginal section. Shortening round ligaments, removal of right ovarian cyst
4-16-03	10302 M. P.	23	S.	Poor	Dementia præcox	3 wks.	Cyst of left ovary	4-30-03	Abdominal section left ovarian cyst removed
4-8-03	10285 A. R.	32	M.	"	Melancholia, acute	6 mos.	Retroversion, laceration of cervix and perineum	5-9-03	Curettage, hysterorrhaphy
5-14-03	10377 D. McL.	34	S.	"	Depressive hallucinosis	3 yrs.	Acute appendicitis	5-17-03	Appendectomy and evacuation of pus
4-4-03	10283 A. L.	26	M.	"	Melancholia, acute	1 wk.	Adherent retroversion, double pyosalpinx	5-21-03	Excision cervix and perineorrhaphy; suspension uterus

MAJOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Satisfactory	Rapid	None	10–15–02	Recovered		Patient had almost recovered before operation
"	"	Marked	3–30–03	"		Patient had begun to improve before operation; after operation improvement more rapid
"	"	Very marked	9–4–03	"		No improvement prior to operation.
"	"	None	Transferred to E. hospital	Unimproved		
Died Aug. 18						
Satisfactory	Marked	Gradual but very marked	12–26–03	Recovered		Hallucinations 15 mos. prior to operation. No hallucinations subsequent to 4 mos. after operations.
Not satisfactory	Slight	None	Discharged 5–22–03	Unimproved		
Satisfactory	"	"	Discharged 4–23–04	"		
"	Rapid	Slight	Discharged 8–4–03	"		
"	Slight	None	Died 4–2–04 Tuberculosis	None		
"	Marked	Slight	Discharged 7–11–03			
"	"	Very marked	Discharged 10–19–03	Improved		At time of operation patient greatly excited. Active hallucinations. All disappeared after operation. Discharged apparently cured, yet having same hallucinations
"	"	Marked	12–1–03	Improved		Improvement does not appear to be due to operation

MAJOR OPERATIONS

Admission	Name	Age	Social condition	General health before operation	Mental diagnosis	Duration of mental disease previous to entering hospital	Pelvic condition	Date of operation	Operation
5–21–03	10395 L. C.	35	S.	Fair	Mania, acute	4 mos.	Adherent retroversion, small fibroids	7–21–03	Myomectomy; suspension uterus
3–11–02	10205 M. C. N.	30	S.	"	Melancholia, acute	6 wks.	Retroversion	7–21–03	Hysterorrhaphy
6–23–03	10475 M. McG.	45	S.	"	Paranoia	6 mos.	Right ovarian cyst	7–28–03	Salpingo-oophorectomy
							Intestinal obstruction	9–23–03	Intestinal resection
11–9–01	9024 M.G.	35	S.	Poor	Melancholia, chronic	10 yrs.	Multiple fibromyoma	9–9–02	Supra-vaginal hysterectomy
4–1–03	10268 M. B.	31	S.	Fair	Paranoia	10 mos.	Impacted fibromyoma, umbilical hernia	6–11–03	Supra-vaginal hysterectomy, herniotomy
8–17–03	10639 L. H.	32	M.	"	Epileptic psychosis	2 wks.	Double hydrosalpinx retroversion (adherent). Lacerated cervix and perineum	11–12–03	Anterior vaginal section, shortening round ligaments and salpingectomy
1–6–03	11094 M. J.	28	S.	"	Dementia primary	2 yrs.	Adherent retroversion dysmenorrhœa, oophoritis	11–14–03	Hysterorrhaphy and oophorectomy (right)
7–4–03	10497 F. D.	28	M.	"	Dementia præcox	18 wks.	Salpingo-oophoritis, retroversion, lacerated cervix and perineum	12–10–03	Salpingo-oophorectomy, hysterorrhaphy and perineorrhaphy
1–6–03	10021 L. P.	28	M.	"	Mania, acute		Fibro-myoma	12–31–03	Hystero-salpingo-oophorectomy (left)
6–5–03	10426 M. S.	45	M.	Poor	Melancholia, chronic	4 yrs.	Multiple-fibromyoma, anteflexion, laceration of cervix and perineum	1–14–04	Anterior vaginal section — myomectomy—Goffe's operation—excision of cervix and perineorrhaphy
12–23–02	9993 C. S.	21	S.	"	Dementia præcox	1 mo.	Pelvic abscess	1–28–04	Complete hysterectomy
1–23–04	11140 J. B.	36	W.	Fair	Melancholia, acute	6 wks.	Adherent retroversion	4–14–04	Hysterorrhaphy
2–1–04	11170 H. F.	22	M.	"	Dementia præcox	5 days	Retroversion	4–28–04	Cœliotomy and repair of puncture of uterus
4–22–04	11384 V. A.	21	M.	Poor	Mania, acute (delirious)	15 days	Puerperal septicæmia (Pelvic abscess)	4–28–04	Complete hysterectomy

MAJOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Satisfactory	Marked	Marked	11–17–03	Recovered		Slight mental improvement before operation
"	"	"	4–9–04	"		Slight mental improvement before operation
Died				Died Sept. 23–03. Shock		Slight mental improvement before operation; recovered from first operation, 2 mos. later intestinal obstruction developed
Satisfactory	Marked	Marked	10–10–04	Recovered		Slight mental improvement before operation
"	"	None	8–23–04	Improved		Slight mental improvement before operation
"	Slight	"	1–5–04	"		Improvement does not appear to be due to operation
"	"	Slight	7–29–04	"		Improvement begun before operation
"	"	"	2–8–04	"		Some improvement before operation
"	Marked	"	4–19–04	"		Some improvement following operation. Patient re-admitted Oct. 6–04
"	"	"	4–15–04	"		Improvement before operation
"	"	"	5–16–04	"		Marked improvement after operation; patient re-admitted May, 04
"	"	"	6–10–04	Recovered		Some improvement before operation
"	"	"	7–1–04	Improved		Some improvement before operation
Died	None	None		Died 4–30–04		Died 2 days after operation, of exhaustion from puerperal sepsis

MAJOR OPERATIONS

Admission	Name	Age	Social condition	General health before operation	Mental diagnosis	Duration of mental disease previous to entering hospital	Pelvic condition	Date of operation	Operation
6-7-00	7279 E. C.	34	M.	Poor	Mania, acute	6 days	Tuberculous peritonitis	2-11-04	Exploratory cœliotomy
3-26-04	11313 F. H.	38	M.	Fair	Dementia præcox	2 mos.	Multiple fibromyoma	5-5-04	Supra-vaginal hysterectomy
5-5-04	11425 F. H.	32	S.	"	Paranoia	10 days	Adherent retroversion salpingo-oophoritis	6-9-04	Hysterorrhaphy—left salpingo-oophorectomy—right salpingectomy
11-17-96	48361 L. S.	32	S.	Poor	Mania, chronic		Fibro-myomata uteri	8-19-02	Supra-vaginal hysterectomy
11-14-98	6094 L. L.	40	S.	"	Melancholia, chronic	3 yrs.	" " "	9-3-02	Supra-vaginal hysterectomy
2-12-02	9190 C. S.	39	S.	"	Dementia terminal	5 yrs.	" " "	9-23-02	Supra-vagina hysterectomy
9-11-02	9732 L. S.	34	M.	"	Melancholia, chronic	3½ yrs.	Retroflexion, lacerated cervix and perineum	11-6-02	Hysterorrhaphy—excision cervix—perineorrhaphy, curettage
2-12-00	7028 J. N.	32	..	Fair	Melancholia, chronic	1 yr.	Right inguinal hernia	11-20-02	Herniotomy
10-20-00	8180 L. G.	48	M.	"	Melancholia, chronic	1 yr.	Umbilical hernia	12-19-02	"
8-27-97	5191 S. L.	39	M.	"	Mania, chronic	10 yrs.	Multiple fibromyomata retroversion	2-5-03	Myomectomy; hysterorrhaphy
10-3-97	5967 A. H.	36	..	Poor	Melancholia, chronic	3 yrs.	Ovarian cyst	2-12-03	Excision of ovarian cyst
2-7-03	10106 F. S.	45	M.	Fair	Melancholia, chronic	1 yr.	Fibro-myomata uteri salpingo-oophoritis	4-16-03	Supra-vaginal hysterectomy
2-27-03	10154 J. J.	39	M.	"	Paranoia	1 wk.	Fibro-myomata uteri ovarian cyst	4-23-03	Supra-vaginal hysterectomy
1-7-03	10022 E. B.	49	M.	"	"	3 yrs.	Fibro-myoma uteri impacted in pelvis	7-2-03	Supra-vaginal hysterectomy adnexa removed
4-6-97	5029 R. P.	33	M.	"	Mania, chronic	5 mos.	Fibro-myoma uteri	7-14-03	Supra-vaginal hysterectomy right ovary left
3-24-99	6382 A. V.	40	..	"	Dementia, secondary		Incarcerated femoral hernia, left	7-24-03	Operation—reduction
2-3-03	10493 N. H.	35	W.	"	Paranoia	1 yr.	Adherent retroversion lacerated cervix and perineum		Suspension uterus; left tube and ovary removed; excision cervix and repair of perineum

MAJOR OPERATIONS

Result operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Unsatisfactory	None	None	Died 4–4–04	None		Died of pulmonary and peritoneal tuberculosis 2 mos. after operation
Satisfactory	Marked	Marked	9–17–04	Recovered		Slight improvement before operation
"			Died 7–23–04	None		Died 14 days after operation of pulmonary emboli
"	Marked	None		...	2–1–05	No mental improvement before or after operation
"	"	"			"	No mental improvement before or after operation
"	"	"			"	No mental improvement before or after operation
"	None	"			"	Slight mental improvement before operation
"	Marked	Slight			"	Slight mental improvement before operation
"	"	None			"	Slight mental improvement before operation
"	"	"			"	Slight mental improvement before operation
"	Very marked	"			"	Slight mental improvement before operation
"	Marked	"			"	Slight mental improvement before operation
"	"	Slight			"	Mental improvement before operation
"	"	None			"	Slight improvement before operation
"	"	"			"	Unchanged
"	"	"			"	Much improved before operation
"	"	"			"	Slight improvement before operation

MAJOR OPERATIONS

Admission	Name	Age	Social condition	General health before operation	Mental diagnosis	Duration of mental disease previous to entering hospital	Pelvic condition	Date of operation	Operation
8-15-98	53191 H. M.	24	..	Fair	Dementia terminal	6 yrs.	Multiple fibromyoma uteri	9-10-3	Supra-vaginal hysterectomy; both adnexa removed
9-3-03	10693 K. T.	30	S.	"	Paranoia	6 mos.	Multiple fibromyoma uteri	9-17-03	Supra-vaginal hysterectomy; ovaries not removed
12-2-03	87116 R. M.	38	S.	"	Imbecility	Life	Retroversion, fibromyoma—lacerated cervix and perineum	10-1-03	Supra-vaginal hysterectomy; ovaries removed
4-13-03	10297 I. G.	28	W.	"	Paranoia		Ovarian cyst	10-1-03	Cyst removed through posterior vaginal incision
4-29-03	10333 N. H.	37	W.	Poor	Dementia præcox	8 mos.	Ovarian cyst, retroversion, lacerated cervix and perineum	9-15-03	Curettage, excision cervix perineorrhaphy, abdominal section, ovarian cyst removed
8-12-03	10620 S. G.	29	S.	Fair	Epileptic psychosis		Adherent retroversion	11-3-03	Removal both adnexa, suspension of uterus
2-5-03	10099 N. F.	34	S.	"	Melancholia, acute	3 mos.	Chronic appendicitis	3-24-03	Appendectomy
8-28-03	10668 L. S.	46	M.	"	Paranoia	6 mos.	Fibro-myoma	12-3-03	Supra-vaginal hysterectomy
1-15-95	41121 L. L.	39	W.	Poor	Melancholia, chronic	2 days	Multiple fibroids of uterus	12-10-03	Vaginal hysterectomy
9-5-03	10692 M. M.	25	M.	Fair	Melancholia, acute	2 mos.	Double adnexal disease	12-24-03	Removal both adnexa and hysterorrhaphy
4-29-03	10334 M. H.	45	W.	"	Dementia præcox	4 mos.	Adherent retroversion	1-5-04	Suspension of uterus, left tube and ovary removed
9-14-03	10709 L. P.	31	M.	"	Mania, acute	5 mos.	Fibroid uterus	1-14-04	Supra-vaginal hysterectomy with removal of ovaries
10-18-07	51371 M. G.	43	..	"	Melancholia, chronic, alcoholic		Uterine fibromyoma	2-4-04	Supra-vaginal hysterectomy with removal of ovaries
10-21-03	10829 A. R.	23	S.	"	Dementia Præcox	3 years	Adherent retroversion	2-25-04	Appendectomy, hysterorrhaphy
12-29-03	11063 M. H.	46	W.	"	Dementia paralytica	1 mo.	Fibro-myoma uteri	4-21-04	Myomectomy, appendectomy
4-14-04	11366 M. McD.	44	S.	"	Mania depressive		Fibro-myoma uteri	7-11-04	Supra-vaginal hysterectomy with ovaries removed
10-1-03	10784 J. S.	22	S.	Poor	Dementia secondary	10 yrs.	Fibro-myoma uteri	9-29-04	Myomectomy

MAJOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Satisfactory	Marked	None			2-1-1905	Unchanged
"	"	"	12-20-04	Improved		
"	"	"			2-1-1905	Unchanged
"	"	"			"	Slight improvement before operation
"	Has Tuberculosis	"	Died 11-6-04	Tuberculosis	"	
"	Marked	"			"	Unchanged
"	Slight	"			"	Visceral delusions still exist unchanged
"	"	Slight	12-31-04	Improved		
"	"	None			2-1-1905	Unchanged
"	"	"			"	"
"	"	"			"	"
"	Marked	Slight			"	Slight improvement due to operation
"	Slight	"			"	Unchanged
"	"	"			"	"
"	Marked	"			"	"
"	Slight	"	Transferred to L. I. State Hospital	Improved	"	
"	"	"			"	Unchanged

OPERATIONS FOR DISPLACED UTERI

Admission	Name	Age	Social condition	General health before operation	Mental diagnosis	Duration of mental disease prior to entering hospital	Pelvic condition	Date of operation	Operation
6-2-02	9463 M. G.	27	M.	Fair	Melancholia, chronic	4 yrs.	Movable retroversion; lacerated cervix and perineum	7-29-02	Alexander's operation; excision cervi and perineorrhapl
10-30-02	9868 C. S.	32	S.	Poor	Melancholia, chronic	2 yrs.	Movable retroversion; lacerated cervix	12-4-02	Alexander's operation; excision cervi and curettage
10-1-02	9785 E. P.	44	M.	Fair	Melancholia, acute	1 mo.	Movable retroversion; lacerated cervix and perineum	12-4-02	Alexander's operation; excision cervi and perineorrhapi
11-8-02	9887 M. G.	30	M.	"	Melancholia, acute	1 mo.	Movable retroversion	12-11-02	Alexander's operation; curettage
3-25-03	10254 D. R.	25	S.	"	Dementia, primary	3 mos.	Movable retroversion	5-5-03	Alexander's operation; curettage
2-14-03	10123 E. R.	33	M.	"	Melancholia, acute	1 yr.	Movable retroversion; lacerated cervix and perineum	5-28-03	Alexander's operation; curettage, perineorrhaphy
4-23-03	10318 S. J.	24	S.	"	Mania, depressive	3 wks.	Movable retroversion; endometritis	8-25-03	Alexander's operation; curettage
5-7-03	10355 N. Q.	47	S.	Poor	Alcoholic delirium		Procidentia; chronic nephritis	1-7-04	LaForte's operatio
3-18-03	10328 E. C.	33	W.	Fair	Mania, chronic	6 yrs.	Movable retroversion; endometritis, lacerated perineum	11-24-03	Alexander's operation; curettage, perineorrhaphy
11-7-03	10891 A. M.	36	S.	"	Melancholia, acute	11 days	Movable retroversion	1-22-04	Alexander's operation
10-10-03	10791 T. H.	26	M.	"	Mania, acute	6 wks.	Movable retroversion; lacerated cervix and perineum	1-28-04	Alexander's operation; excision cervix and perineorrhaphy
8-21-03	10648 M. D.	23	S.	"	Mania, acute	2 mos.	Movable retroversion	2-2-04	Alexander's operation; curettage
10-30-03	10896 L. M.	27	S.	Poor	Melancholia, chronic	4 mos.	Movable retroversion; dysmenorrhœa	3-31-04	Alexander's operation; curettage
12-24-03	11060 A. C.	28	M.	Fair	Dementia præcox	3 mos.	Movable retroversion; lacerated perineum	2-25-04	Alexander's operation; perineorrhaphy, curettage
3-9-04	11269 K. B.	29	S.	"	Mania, depressive	1 wk.	Movable retroversion	5-26-04	Alexander's operation
5-12-04	11455 A. H.	39	Sep.	"	Paranoia	5 yrs.	Movable retroversion; lacerated perineum	7-26-04	Alexander's operation; shortening utero-sacral ligaments; perineorrhaphy

OPERATIONS FOR DISPLACED UTERI

Result of Operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
atisfactory	Marked	None	Transferred 4–03	Improved		
"	Slight	Marked 6 mos. after operation	9–14–03	Recovered		No mental improvement for 5 mos. after operation
"	Marked	Slight	8–21–03	Improved		Some improvement before operation
"	Noticeable	"	1–30–02	"		Slight improvement before operation.
"	Marked	Marked	9–14–03	Recovered		Considerable improvement before operation
"	"	Slight	7–27–03	"		Re-admitted March 16–04
"	"	Marked	11–20–03	"		Slight improvement before operation
"	None	Slight	Died 4–26–04 Nephritis	Died		Slight improvement after operation, chronic nephritis, which was present on admission
"	Slight	"	2–12–04	Improved		Some improvement before operation
"	"	"	8–8–04	Recovered		Some improvement before operation
"	"	"	5–9–04	"		Some improvement before operation
"	"	"	8–8–04	"		Some improvement before operation
"	Marked	"	7–6–06	Improved		Some improvement before operation
"	Slight	"	5–26–04	"		Slight improvement before operation
"	"	"	9–20–04	Recovered		Some improvement before operation
"	"	None	9–26–04	Improved		Some improvement before operation

OPERATIONS FOR DISPLACED UTERI

Admission	Name	Age	Social condition	General health before Operation	Mental diagnosis	Duration of mental disease prior to entering hospital	Pelvic condition	Date of operation	Operation
8-22-00	7865 A. C.	30	M.	Poor	Melancholia, chronic		Movable retroversion; lacerated cervix and perineum	7-22-02	Alexander's operation; excision cervix, perineorrhaphy
3-28-02	9449 M. S.	29	M.	Fair	Melancholia, chronic	2 yrs.	Retroflexion; lacerated cervix	9-16-02	Alexander's operation, excision of cervix
5-11-02	9567 S. A.	30	M.	"	Mania, chronic	3 yrs.	Retroflexion; lacerated cervix and perineum	10-30-02	Alexander's operation; excision of cervix, perineorrhaphy and curettage
9-11-02	9730 I. H. K.	30	W.	"	Melancholia, chronic	16 mos.	Movable retroversion; lacerated cervix and perineum	11-20-02	Alexander's operation; excision of cervix, perineorrhaphy
9-19-02	9758 J. A.	38	M.	Poor	Paranoia	2 yrs.	Movable retroversion; lacerated perineum	12-19-02	Alexander's operation; perineorrhaphy
10-21-02	9848 L. H.	38	W.	Fair	Melancholia, acute		Retroversion, lacerated perineum	31-4-03	Goffe's operation; perineorrhaphy
3-7-03	10198 G. R.	32	S.	Poor	Dementia, primary	4 mos.	Movable retroflexion	4-30-03	Alexander's operation
3-21-03	10247 A. T.	40	W.	Fair	Paranoia	3 yrs.	Movable retroversion, lacerated cervix and perineum	5-21-03	Alexander's operation, excision of cervix and perineorrhaphy.
3-7-03	10194 M. D.	31	S.	"	Melancholia, chronic	2 yrs.	Movable retroversion, endometritis	5-28-03	Alexander's operation, curettage
6-7-01	8686 M. D. C.	26	S.	"	Dementia terminal	6 mos.	Movable retroversion, right inguinal hernia	8-25-03	Alexander's operation, herniotomy
3-28-03	10263 L. S.	36	M.	"	Melancholia, chronic	3 yrs.	Retroflexion, lacerated cervix and perineum	6-25-03	Alexander's operation, excision of cervix and perineorrhaphy
11-17-02	9918 A. G.	29	W.	Poor	Melancholia, chronic	2 yrs.	Retroversion, lacerated cervix and perineum	7-14-03	Alexander's operation, excision cervix, curettage and repair of perineum
3-6-03	10349 J. G.	35	W.	Fair	Dementia paralytica	7 yrs.	Movable retroversion, lacerated cervix and perineum	7-28-03	Alexander's operation, excision cervix, curettage and repair of perineum
3-5-03	10181 ..	..	..	"	Dementia, primary		Movable retroversion	8-11-03	Curettage, Alexander's operation
3-9-03	10199 C. B.	43	M.	"	Melancholia, acute	14 mos.	Movable retroversion, lacerated cervix and perineum	8-18-03	Alexander's operation, curettage and perineorrhaphy
3-6-03	10184 B. C.	30	S.	"	Melancholia, acute	2 mos.	Movable retroversion	8-29-03	Curettage, Alexander's operation

OPERATIONS FOR DISPLACED UTERI

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Satisfactory	Marked	None	9-26-04		2-1-05	Slight improvement before operation
"	"	"	"		"	Slight mental improvement before operation
"	Slight	"			"	Slight mental improvement before operation
"	None	"			"	Some mental improvement before operation
Unsatisfactory	"	"			"	Slight mental improvement before operation
Satisfactory	Marked	"	1-18-05	Recovered		Slight improvement before operation
"	Slight	"			2-1-05	Slight improvement before operation
"	"	"			"	Slight improvement before operation
"	"	"			"	Slight improvement before operation
"	"	"			"	Slight improvement before operation
"	"	"			"	Slight improvement before operation
"	"	"			"	Unchanged
"	"	"			"	"
"	"	"			"	Slight improvement
"	Marked	Slight			"	Slight improvement under general treatment
Unsatisfactory	None	None			"	Slight improvement under general treatment

OPERATIONS FOR DISPLACED UTERI

Admission	Name	Age	Social condition	General health before operation	Mental diagnosis	Duration of mental disease prior to entering hospital	Pelvic condition	Date of operation	Operation
11–23–	9851 A. B.	35	S.	Fair	Mania	— yrs.	Lacerated cervix and perineum. Procidentia	7–10–03	Repair of cervix and perineum. Hysterorrhaphy
4–29–03	10330 H. B.	35	M.	"	Melancholia, acute	3 wks.	Movable retroversion, lacerated perineum	10–6–03	Curettage, Alexander's operation, repair of perineum
8–1–03	10591 H. M.	31	S.	"	Paranoia	4 yrs.	Endometritis; movable retroversion	11–8–03	Curettage, Alexander's operation
7–25–03	10555 M. B.	43	M.	"	Dementia præcox	1 yr.	Movable retroversion, lacerated cervix and perineum	11–14–03	Excision of cervix, perineorrhaphy and Alexander's operation
6–18–02	9505 N. McS.	28	M.	Poor	Melancholia, acute	5 mos.	Movable retroversion, lacerated cervix and perineum	12–3–03	Excision of cervix, perineorrhaphy and Alexander's operation
3–9–03	10200 C. D.	25	M.	"	Mania, acute	4 wks.	Movable retroversion, lacerated cervix and perineum	12–1–03	Vaginal shortening utero-sacral ligaments, curettage and excision cervix
11–11–03	10907 M. N.	31	M.	Fair	Paranoia	6 mos.	Movable retroversion, lacerated cervix and perineum	1–7–04	Alexander's operation, excision cervix and perineorrhaphy
10–19–03	10808 E. L.	27	M.	"	Dementia præcox	3 yrs.	Movable retroversion	2–11–04	Curettage, Alexander's operation
12–17–03	11025 M. G. L.	41	M.	"	Paranoia	5 yrs.	Movable retroversion	2–16–04	Curettage, Alexander's operation
2–8–04	11188 R. H.	25	M.	Poor	Melancholia, acute	3 days	Sapræmia after labor	2–16–04	Curettage
11–6–03	10889 N. P.	38	M.	Fair	Paranoia	6 yrs.	Movable retroversion, laceration of perineum	3–24–04	Curettage, Alexander's operation and perineorrhaphy
9–18–03	10722 N. S.	36	S.	"	Dementia præcox	5 yrs.	Movable retroversion	3–24–04	Curettage, Alexander
11–11–03	10903 E. N.	25	M.	"	Melancholia, acute	3 mos.	Movable retroversion, laceration perineum	4–7–04	Alexander's operation after vaginal shortening of utero-sacral ligaments, perineorrhaphy
12–29–03	11062 S. G.	40	"	"	Dementia præcox	4 yrs.	Complete procidentia	4–14–04	LaForte's operation
12–16–92	3430 M. C.	35	"	"	Melancholia, chronic		Complete procidentia	4–21–04	LaForte's operation
3–2–04	11248 N. W.	39	"	Poor	Paranoia	2 yrs.	Movable retroversion, lacerated cervix and perineum	6–2–04	Alexander's operation, excision cervix, perineorrhaphy

OPERATIONS FOR DISPLACED UTERI

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in Hospital	Remarks
Satisfactory	Marked	Slight			2–1–05	Slight improvement under general treatment
"	Slight	None			"	Unchanged mentally
"	"	"			"	Slight improvement mentally
"	Marked	"		...,	"	Unchanged mentally
"	Slight	"			"	Slight improvement
Unsatisfactory	None	"			"	Unchanged
Satisfactory	Slight	"			"	"
"	"	"			"	"
Unsatisfactory	None	"	Transferred	1–11–04	...	Slight improvement
Satisfactory	Marked	Slight			2–1–05	Unchanged
"	Slight	None			"	Slight improvement under general treatment
"	"	"			"	Slight improvement under general treatment
"	"	"			"	Slight improvement under general treatment
"	"	"			"	Unchanged
"	"	"			"	"
"	"	"			"	"

OPERATIONS FOR DISPLACED UTERI

Admission	Name	Age	Social condition	General health	Mental diagnosis	Duration of mental disturbance previous to entering hospital	Pelvic conditions	Date of operation	Operation
11-6-03	10890 N. S.	28	"	Fair	Dementia præcox	6 wks.	Movable retroversion, lacerated cervix and perineum	6-2-04	Alexander's operation, excision cervix, perineorrhaphy
3-16-04	11285 S. P.	20	S.	"	Melancholia, acute	3 mos.	Movable retroversion	6-28-04	Alexander, curettage
6-9-04	11553 N. L.	50	M.	"	Involution melancholia	2 yrs.	Procidentia, complete	7-26-04	LaForte's operation

MINOR OPERATIONS

6-13-02	9507 M. D.	23	S.	Fair	Melancholia, acute	3 previous attacks	Endometritis, stenosis of internal os	7-22-02	Divulsion and curettage
5-7-02	9392 M. D.	21	M.	"	Puerperal mania	1 mo.	Endometritis	8-1-02	Curettage
4-29-02	9373 A. E.	18	S.	"	Circular insanity	3 wks.	Endometritis	8-26-02	Divulsion and curettage
10-11-01	8963 A. O.	29	M.	"	Melancholia, acute	1 wk.	Amenorrhea, endometritis	9-10-02	Divulsion and curettage
9-8-02	9721 N. B.	32	"	"	Melancholia, acute	6 mos.	Lacerated cervix and perineum	10-7-02	Excision cervix, perineorrhaphy, curettage
8-1-02	9644 N. B.	35	"	"	Melancholia, acute	3 days	Lacerated cervix and perineum	11-6-03	Excision cervix, curettage, perineorrhaphy
3-28-02	9300 A. G.	42	"	"	Melancholia, chronic	2 yrs.	Retroposited uterus	11-13-03	Excision cervix
10-16-02	9884 B. X.	34	"	Poor	Melancholia, chronic	11 mos.	Lacerated cervix and perineum	11-13-03	Excision cervix, perineorrhaphy
12-12-01	9076 H. H.	30	"	Fair	Melancholia, acute	8 days	Lacerated cervix and perineum	12-19-02	Excision cervix, perineorrhaphy
10-31-02	9875 M. Z.	35	"	"	Melancholia, chronic	2 yrs.	Lacerated cervix and perineum	1-29-03	Excision cervix, perineorrhaphy
7-11-02	9564 T. S.	32	S.	"	Melancholia, acute (hysterical)	2 mos.	Thickened nymphæ and clitoris	9-25-02	Excision clitoris and nymphæ
11-16-02	9917 C. S.	37	M.	"	Melancholia, acute	4 mos.	Lacerated cervix and perineum	2-12-03	Excision cervix, perineorrhaphy, curettage
2-23-03	10139 F. C.	28	"	"	Paranoia	8 yrs.	Lacerated cervix and perineum	5-14-03	Excision cervix and perineorrhaphy
10-2-02	9796 M. F.	37	"	"	Melancholia, acute	9 days	Lacerated perineum	3-14-03	Curettage, repair of perineum
8-6-01	8830 A. M.	25	"	"	Melancholia, chronic	1 mo.	Lacerated cervix and perineum	8-12-02	Excision cervix, repair of perineum

OPERATIONS FOR DISPLACED UTERI

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Satisfactory	Slight	None			2-1-05	Unchanged
....	Marked	"			"	Slight
Satafactory	"	Slight	11-12-04	Improved	"	Marked mental improvement not referable to operation

MINOR OPERATIONS

atisfactory	Marked	Marked	5-23-03	Improved		Some improvement before operation
"	Noticeable	Slight	2-28-03	Recovered		Operation no effect in cure
"	"	"	11-7-02	Improved		Operation no effect in improvement
fenstruation returned 2 mos. after operation	Marked	None	4-8-03	"		
atisfactory	Noticeable	"	11-15-02	Recovered		Operation no effect in cure
"	"	"	Transferred	Improved		
"	Marked; menstruation regular and painless	Slight	6-27-03	"		
"	Slight	"	5-4-03	"		Slight improvement before operation
"	Noticeable	None	6-2-03	"		Re-admitted Oct. 10-03
"	Marked	Marked 4 mos. after operation	5-3-03	Recovered		Some improvement before operation
"	None	None	Transferred	Not improved		
"	Marked	Marked especially	5-23-03	Recovered		Improved more rapidly after operation
"	"	Slight	9-19-03	Improved		Re-admitted Jan. 13-04
"	Noticeable	Marked	5-16-03	Recovered		Slight improvement before operation
"	"	"	2-26-04	"		Had begun to improve before operation

MINOR OPERATIONS

Admission	Name	Age	Social condition	General health	Mental diagnosis	Duration of mental disturbance previous to entering hospital	Pelvic condition	Date of operation	Operation
11-7-02	9884 M. S.	35	M.	Fair	Chronic delusional insanity	5 mos.	Lacerated perineum	1-29-03	Curettage, perineorrhaphy
2-18-02	9185 V. S.	42	"	"	Epilepsy, dementia	4 yrs.	Laceration perineum, endometritis	2-12-03	Curettage, perineorrhaphy
11-19-02	9924 T. M.	30	"	"	Mania, acute	6 wks.	Laceration cervix and perineum	3-5-03	Excision cervix, perineorrhaphy
11-8-02	9891 N. K.	26	W.	"	Melancholia, acute	9 mos. 2 previous attacks	Laceration cervix and perineum	3-14-03	Excision cervix, repair of perineum
3-14-03	10223 M. E.	30	S.	"	Melancholia, acute	2 mos.	Endometritis	3-26-03	Curettage
3-28-03	10261 E. K.	28	M.	Poor	Mania, depressive	4 days	Sapræmia following confinement	4-1-03	"
4-26-98	42147 K. K.	33	S.	"	Dementia, terminal	4 wks.	Carcinoma uterus	4-30-03	"
3-5-03	10179 H. S.	40	M.	Poor	Melancholia, acute	1 yr.	Laceration of cervix and perineum	5-26-03	Excision of cervix and repair of perineum
3-6-03	10191 B. L.	36	"	Fair	Melancholia, acute	2 mos.	Laceration of cervix and perineum	6-9-03	Curettage, excision of cervix and repair of perineum
6-3-03	10419 B. S.	30	"	Poor	Exhaustive psychosis	1 wk.	Puerperal septicæmia	6-9-03	Exploration of cavity of the uterus
7-1-04	10941 B. D.	18	S.	"	Melancholia, chronic	2 or 3 yrs.	Endometritis	1-11-03	Curettage
3-21-03	10246 O. S.	47	M.	Fair	Dementia, terminal	3 mos.	Laceration of cervix and perineum	6-11-03	Excision cervix and repair of perineum
11-13-02	9906 F. H.	47	"	Anæmic	Melancholia, chronic	5 mos.	Laceration of perineum endometritis; retroversion	6-2-03	Curettage, repair of perineum
2-25-03	10147 B. S.	30	"	Fair	Melancholia, acute	3 mos.	Laceration cervix and perineum	6-2-03	Excision cervix, repair of perineum
3-3-03	10182 E. M. C.	30	"	"	Melancholia, chronic	2 mos.	Laceration cervix and perineum	6-27-03	Excision cervix and repair of perineum, curettage

MINOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result Mental	Remaining in hospital	Remarks
Satisfactory	Noticeable	None	4–9–04	Improved		Re-admitted
"	None	"	Died, tuberculosis 1 yr. after			
"	Marked	Marked	6–20–03	Recovered		Four mos. prior to operation no improvement; after operation improvement rapid to time of discharge
"	"	"	4–17–03	"	Re-admitted 5–2–04	No improvement before operation; 1 mo. after operation bright and cheerful having no delusion or trace of former depression
"	Slight	"	5–11–03	"		Mental depression in part relieved by operation
"	Marked	"	7–4–03	"		No improvement before operation
None	None	None		Died June 22, exhaustion from progress of carcinoma		
Satisfactory	Marked	Marked	7–28–03	Recovered		Considerable improvement prior to operation. Remained in hospital 4 mos.
"	"	"	9–19–03	"		Re-admitted. Considerable improvement prior to operation
"	None	None	Died 6–17–03 Acute lobar pneumonia			Exploration of the uterus was to determine presence of placental or decidual tissue
"	Marked	Slight	6–22–03	Improved		Some improvement prior to operation
"	Slight	"	11–19–03	"	...	Slight mental improvement prior to operation
"	Marked	"	10–22–03	"		Slight improvement before operation
"	Slight	"	Died 3–14–04 Exhaustion			Slight improvement before operation
"	"	None			2–05	Slight improvement before operation

MINOR OPERATIONS

Admission	Name	Age	Social condition	General health	Mental diagnosis	Duration of mental disturbance previous to entering hospital	Pelvic condition	Date of operation	Operation
3–17–03	10214 F. V.	41	M.	Fair	Paranoia	3 yrs.	Laceration cervix and perineum	7–19–03	Excision cervix and repair of perineum, curettage
4–22–03	10315 R. G.	28	"	Poor	Mania chronic	4 mos.	Endometritis; laceration of perineum	7–25–03	Curettage, excision cervix and repair of perineum
6–8–03	10437 E. O' L.	44	"	Fair	Melancholia, chronic	3 yrs.	Endometritis; laceration of perineum	8–1–03	Curettage and repair of perineum
3–25–03	10255 H. R.	36	"	"	Dementia terminal	4 mos.	Laceration cervix and perineum	8–11–03	Curettage, excision of cervix and repair of perineum
6–17–01	8710 M. P.	25	"	"	Melancholia, chronic	5 yrs.	Endometritis; laceration of cervix and perineum	8–1–03	Curettage, excision of cervix and perineorrhaphy
3–20–03	10241 D. T.	22	"	"	Melancholia, acute puerperal	11 days	Endometritis; laceration of cervix and perineum	8–4–03	Curettage, repair of cervix and perineum
3–19–03	10238 L. L.	28	"	"	Dementia, secondary	10 yrs.	Complete laceration of perineum	8–11–03	Repair of perineum
3–15–03	10300 M. N.	36	"	Poor	Melancholia, acute	2 wks.	Fistula in ano	8–15–03	Repair
3–18–03	10230 S. L.	34	"	Fair	Mania, acute	2 wks.	Laceration cervix and perineum	8–15–03	Curettage and repair of perineum
3–19–03	10240 C. S.	46	"	"	Paranoia	2 wks.	Lacerated cervix and perineum	8–8–03	Curettage, excision of cervix, perineorrhaphy
3–28–03	10265 A. B.	36	"	"	Paranoia	1 yr.	Lacerated cervix and perineum	8–8–03	Curettage, excision of cervix, perineorrhaphy
5–1–03	10340 M. K.	27	"	"	Dementia præcox	1 mo.	Endometritis	8–18–03	Curettage
5–16–03	10382 M. D.	30	S.	"	Melancholia, acute	18 mos.	Endometritis	9–10–03	Curettage
5–22–02	9424 R. McG. B.	35	M.	"	Dementia præcox	7 or 8 wks.	Lacerated cervix and perineum	8–5–02	Excision of cervix, perineorrhaphy
10–10–02	9827 L. C.	24	..	Fair	Dementia terminal	9 yrs.	Endometritis	4–2–03	Curettage
6–5–03	10429 E. Y.	32	M.	"	Maniacal delusional insanity	2 mos.	Lacerated cervix and perineum	11–10–03	Curettage, excision of cervix and perineorrhaphy
3–31–03	10249 M. S.	30	"	"	Mania, acute	2 wks.	Endometritis, lacerated cervix and perineum	12–8–03	Curettage, trachelorrhaphy and perineorrhaphy
2–4–03	10093 C. R.	34	"	"	" "	8 mos.	Endometritis, lacerated cervix and perineum	12–15–03	Curettage, excision of cervix, perineorrhaphy
7–1–03	10490 A. O.	35	"	"	Melancholia, acute	3 wks.	Lacerated cervix and perineum	9–15–03	Curettage, excision of cervix, perineorrhaphy

MINOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Satisfactory	Marked	None			2–05	Condition unchanged
"	"	"			"	Slight improvement before operation
"	"	"			"	Slight improvement before operation
"	"	"			"	Slight improvement before operation
"	"	"			"	Slight improvement before operation
"	"	"			"	Unchanged
"	"	"			"	Slight improvement
"	"	"			"	Unchanged
"	"	"			"	"
"	"	Slight	10–23–03 Re-admitted 6–2–04	Improved		Slight mental improvement before operation
"	Slight	"	2–5–04	"		Slight mental improvement before operation
"	Marked	Marked	1–4–04	Recovered		Slight mental improvement before operation
"	Slight	Slight	10–16–03	Improved		Slight mental improvement before operation
"	None	None	Died 10-23-04 Exhaustion	None		
"	Marked	None	Transferred 8–4–04	Improved		Transferred to East Hospital Aug. 4–04
"	"	Slight	10–12–04	Recovered		Great improvement before operation
"	Slight	"	4–18–04	"		Slight mental improvement before operation
"	"	"	1–11–04	"		Slight mental improvement before operation
"	Marked	"	11–6–03	"		Considerable mental improvement before operation

MINOR OPERATIONS

missio	Name	Age	Social condition	General health	Mental diagnosis	Duration of mental disturbance previous to entering hospital	Pelvic condition	Date of operation	Operation
8-22-03	10800 M. R.	30	M.	Fair	Melancholia, acute	1 mo.	Lacerated cervix	1-12-04	Excision of cervix
10-22-03	10838 E. Q.	35	"	"	Melancholia, acute	5 mos.	Endometritis	1-22-04	Curettage
12-15-03	11053 I. T.	27	S.	"	Mania, acute	1 mo.	Constriction of urethra	2-4-04	Urethra dilated, curettage
12-14-03	11017 S. S.	21	"	"	Melancholia, chronic	17 mos.	Endometritis	3-10-04	Curettage
12-28-03	11057 S. R.	35	M.	"	Mania, acute	8 mos.	Lacerated cervix and perineum	4-7-04	Excision of cervix and perineorrhaphy
7-3-03	10496 E. T.	50	"	"	" "	2 mos.	Lacerated perineum	4-14-04	Perineorrhaphy
3-17-04	11388 M. G.	26	S.	Poor	Dementia præcox	1 mo.	Anteflexion	5-26-04	Curettage
5-12-04	11457 B. M.	32	M.	Fair	Dementia præcox	18 mos.	Endometritis, lacerated perineum	7-19-04	Curettage, perineorrhaphy
11-6-03	10837 E. L.	35	"	"	Maniacal delusional insanity	10 days	Endometritis, lacerated cervix and perineum	7-30-04	Curettage, excision of cervix and perineorrhaphy
5-27-01	8668 M. M.	25	S.	"	Melancholia, chronic	1 yr.	Endometritis	7-29-02	Curettage
7-31-01	8818 E. P.	22	"	"	Melancholia, chronic	3 yrs.	Anteflexed uterus, dysmenorrhœa,	8-5-02	Curettage
9-17-01	8912 C. K.	37		Poor	Melancholia, chronic	1½ yrs.	Lacerated cervix and perineum	8-26-02	Excision of cervix, perineorrhaphy, curettage
1-8-02	9129 E. S.	39	W	Fair	Dementia præcox	2½ yrs.	Lacerated cervix and perineum	9-30-02	Excision of cervix, perineorrhaphy, curettage
12-24-01	9098 A. L.	32	M.	"	Melancholia, chronic	6 mos.	Lacerated cervix and perineum	9-9-02	Excision of cervix, perineorrhaphy, curettage
1-16-02	9144 G. H. L. L.	20	S.	"	Mania, chronic	6 wks.	Endometritis	9-23-02	Curettage
8-9-02	9634 L. Q.	25	"	"	Dementia, primary	..	Lacerated cervix and perineum	10-10-02	Excision cervix and perineorrhaphy
9-19-02	9761 E. H.	..	M.	"	Paranoia	5 yrs.	Cervical polyp	11-13-02	Excision of polyp
10-21-02	9849 M. K.	34	"	"	Melancholia, chronic	8 mos.	Lacerated cervix, perineum	12-11-02	Excision of cervix and perineorrhaphy
9-8-02	9718 A. D.	26	"	"	Melancholia, chronic	2 mos.	Endometritis	1-1-03	Curettage
10-31-02	9872 T. H.	22	S.	"	Melancholia, acute hysterical	2½ yrs.	"	2-26-03	"
8-13-02	9652 T. L.	44	W.	"	Melancholia, acute	9 mos.	Endometritis; lacerated cervix and perineum	3-5-03	Excision of cervix and perineorrhaphy

MINOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks.
Satisfactory	Marked	Slight	3–22–04	Recovered		Improvement before operation
"	Slight	"	3–4–04	"		Improvement before operation
"	"	"	3–29–04	Improved		Slight improvement before operation
"	"	"	4–14–04	Recovered		Improvement before operation
"	"	None	6–10–04	Improved		Slight improvement before operation
"	"	Slight	6–25–04	Recovered		Improvement before operation
"	Marked	Marked	6–23–04	"		Some improvement before operation
"	Slight	None	10–11–04	Improved		Slight improvement before operation
"	"	Slight	9–19–04	Recovered		Marked improvement before operation
"	Marked	"		Improved	2–1–05	Slight improvement before operation; been in hospital four years
"	None	None			"	No improvement before or after operation
"	Some	"			"	No mental improvement before or after operation
"	Marked	"			"	No mental improvement before or after operation
"	Slight	"			"	Slight mental improvement before operation
"	"	Slight			"	Some mental improvement before operation
"	"	None			"	Slight mental improvement before operation
"	None	"			"	No mental improvement before or after operation
"	Marked	"			"	Some mental improvement before operation
"	"	"			"	Some mental improvement before operation
"	"	"			"	Slight mental improvement before operation
"	"	Slight	12–20–04	Recovered		Mental improvement before operation

MINOR OPERATIONS

Admission	Name	Age	Social condition	General health	Mental diagnosis	Duration of mental disturbance previous to entering hospital	Pelvic condition	Date of operation	Operation
12-6-01	9066 R. S.	41	M.	Fair	Melancholia, chronic	12 yrs.	Fistula in ano, lacerated perineum	6-23-03	Excision of fistula in ano, perineorrhaphy
9-14-01	8901 M. P.	39	"	"	Melancholia, chronic	2 yrs.	Endometritis; lacerated sphincter ani	3-26-03	Perineorrhaphy and curettage
10-9-02	9816 P. N.	25	S.	"	Mania, chronic	2 mos.	Endometritis; lacerated cervix and perineum	4-2-03	Curettage, trachelorrhaphy, perineorrhaphy
9-6-02	9720 R. S.	23	M.	"	Dementia, secondary to epilepsy	1 yr.	Lacerated cervix and perineum	4-9-03	Excision of cervix and perineorrhaphy
12-9-84	1792 R. F.	42	..	"	Mania, chronic	2 yrs.	Cervical polyp, lacerated sphincter ani	4-23-03	Excision of polyp, perineorrhaphy
2-5-92	31-220 J. N.	38	..	Poor	Dementia, secondary	3 yrs.	Cyst of right breast	5-7-03	Excision of cyst
4-2-03	10273 C. E.	61	S.	Fair	Paranoia		Cervical polyp	6-27-03	Excision of polyp
7-4-92	3378 M. F.	36	?	"	Dementia, terminal	1 mo.	Lacerated cervix, perineum, endometritis	8-25-03	Curettage, repair of cervix and perineum
11-15-02	8915 N. T.	38	M.	"	Melancholia, chronic	3 wks.	Laceration cervix and perineum	8-25-03	Curettage, excision of cervix and perineorrhaphy
3-3-03	10174 N. T.	27	"	"	Melancholia, acute		Laceration of cervix and perineum	9-1-03	Curettage, excision cervix and perineorrhaphy
4-16-03	10303 M. H.	36	S.	"	Paranoia	2 yrs.	Specific endometritis	9-5-03	Curettage
8-7-03	10610 F. V.	41	M.	"	Dementia, terminal	13 yrs.	Laceration of cervix and perineum	9-5-03	Curettage, excision of cervix and perineorrhaphy
5-15-03	10380 N. G.	41	S.	Poor	Melancholia, acute	2 yrs.	Laceration of perineum	9-17-03	Curettage and perineorrhaphy
6-26-03	10478 A. F.	36	"	"	Melancholia, chronic	8 yrs.	Endometritis and retroversion	9-17-03	Curettage
7-25-03	10551 C. D.	47	W.	Fair	Melancholia, chronic	8 yrs.	Endometritis	9-29-03	Curettage
8-1-03	10593 E. S.	47	?	"	Dementia, terminal		Laceration of cervix and perineum	9-29-03	Curettage, excision cervix and perineorrhaphy
7-4-03	10504 E. M.	33	S.	"	Dementia præcox		Laceration of cervix and perineum	10-6-03	Curettage, excision cervix
8-1-03	10953 E. S.	47	M.	"	Dementia præcox		Laceration cervix and perineum	10-8-03	Curettage, excision cervix and perineorrhaphy
9-10-02	9727 N. D.	45	"	"	Melancholia, chronic	20 mos.	Complete laceration through perineum	10-15-03	Repair of laceration
7-17-03	10540 E. F.	30	"	Poor	Dementia præcox	3 yrs.	Laceration cervix and perineum	10-5-03	Excision of cervix and repair of perineum

MINOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Satisfactory	Marked	Marked			2–1–05	Some mental improvement before operation
	"	None			"	Some mental improvement before operation
"	"	"			"	Some mental improvement before operation
"	Slight	"			"	No mental improvement before or after operation
"	Marked	"			"	Mental improvement before operation
"	"	"			"	Slight improvement before operation
"	Slight	"			"	Slight improvement before operation
"	Marked	"			"	No change
"	"	"			"	" "
"	"	"			"	Slight mental improvement
Unsatisfactory	None	"			"	No change
Satisfactory	Slight	"			"	" "
"	Has tuberculosis	"			"	Slight mental improvement
"	Marked	"			"	Slight mental improvement
"	"	"			"	Slight mental improvement
"	Slight	"			"	No change
"	Marked	"			"	" "
"	Slight	"			"	" "
"	"	"			"	" "
"	Marked	"			"	" "

MINOR OPERATIONS

Admission	Name	Age	Social condition	General health	Mental diagnosis	Duration of mental disturbance previous to entering hospital	Pelvic condition	Date of operation	Operation
7-29-03	10557 D. S.	30	M.	Fair	Dementia præcox		Endometritis	11-10-03	Curettage
2-5-03	10097 E. D.	38	"	"	Melancholia, chronic	3 yrs.	Endometritis, laceration of perineum	11-17-03	Curettage and repair of perineum
2-10-03	10113 D. H.	35	"	"	Melancholia, acute	8 mos.	Endometritis, laceration of cervix and perineum	11-17-03	Curettage, repair of cervix and perineum
1-7-03	10025 C. K.	23	"	"	Dementia paralytica	1 yr.	Endometritis, laceration of cervix and perineum	11-24-03	Curettage, excision of cervix and repair of perineum
6-19-03	10467 E. G.	50	"	"	Paranoia	3 yrs.	Laceration of perineum	11-24-03	Perineorrhaphy
2-6-03	10127 F. S.	34	"	"	Melancholia, chronic	4 mos.	Endometritis, laceration of perineum	12-1-03	Perineorrhaphy and curettage
7-7-90	22245 L. W.	24	W.	"	Melancholia, chronic		Endometritis, laceration of perineum	12-8-03	Curettage and perineorrhaphy
6-6-03	10431 M. K.	30	"	"	Dementia præcox	2 mos.	Endometritis, laceration of perineum	12-15-03	Curettage, excision of cervix and perineorrhaphy
9-7-03	10720 T. G.	38	"	Poor	Melancholia, acute	2 mos.	Endometritis	12-22-03	Curettage
5-15-03	10379 M. D.	34	"	Fair	Dementia præcox	3 wks.	Laceration of perineum	12-24-03	Perineorrhaphy
8-21-03	10653 N. G.	36	S.	"	Dementia paralytica	1 mo.	Endometritis	12-24-03	Curettage
3-4-03	10175 M. C.	46	M.	"	Paranoia	3 mos.	"	12-29-03	"
8-12-03	10618 O. D.	27	"	"	Mania chronic	1 yr.	Laceration cervix and perineum	1-19-04	Curettage, trachelorrhaphy
8-17-03	10622 J. M.	21	"	"	Mania, acute	11 days	Laceration perineum, endometritis	1-18-04	Curettage, perineorrhaphy
5-14-03	10376 K. K.	26	"	"	Dementia præcox	12 days	Endometritis, laceration perineum	1-26-04	Curettage, perineorrhaphy
10-28-03	10833 M. F.	29	S.	"	Melancholia, chronic	6 yrs.	Endometritis	2-9-04	Curettage
3-6-03	10183 G. B.	32	M.	"	Paranoia	8 yrs.	Endometritis, laceration perineum	12-17-03	Curettage, perineorrhaphy
12-5-03	10985 M. McC.	43	"	"	Melancholia, chronic	7 yrs.	Laceration cervix and perineum	4-19-04	Curettage, excision cervix, perineorrhaphy
9-19-03	10723 M. C.	35	S.	Good	Paranoia	5 yrs.	Laceration cervix	3-20-04	Trachelorrhaphy and curettage
11-25-03	10940 C. D.	30	M.	Fair	Mania, acute	4 mos.	Endometritis, laceration perineum	3-1-04	Curettage, perineorrhaphy
10-10-03	10793 F. S.	30	"	"	Mania, chronic	5 yrs.	Laceration perineum	3-3-04	Perineorrhaphy
10-19-03	10806 M. D.	28	S.	"	Dementia præcox	2 yrs.	Movable retroversion	3-10-04	Curettage

MINOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement apparently referable to operation	Discharged	Result mental	Remaining in hospital	Remarks
Satisfactory	Slight	None			2–1–05	No change
"	Marked	"				Slight improvement
"	"	"			2–1905	Slight improvement
"	Slight	"			"	No improvement
"	"	"			"	" "
"	"	Slight			"	Slight improvement
"	"	None			"	" "
"	"	"			"	Unchanged
"	"	"	11–1–04	Recovered		
"	"	"			2–1905	Unchanged
"	"	"			"	"
"	Marked	"			"	"
"	Slight	"			"	"
"	"	"			"	Slight improvement
"	"	"			"	Unchanged
"	"	"			"	Slight improvement
"	"				"	" "
"	Marked	None			"	" "
"	Slight	"			"	" "
"	Marked	Slight		...	"	" "
"	"	None			"	" "
"	Slight	Slight			"	" "

MINOR OPERATIONS

Admission	Name	Age	Social condition	General health	Mental diagnosis	Duration of mental disturbance previous to entering hospital	Pelvic condition	Date of operation	Operation
8-24-03	10656 M. D.	38	M.	Fair	Dementia præcox	...	Laceration cervix and perineum; hemorrhoids	3-31-04	Excision cervix and repair of perineum removal hemorrhoids
1-23-04	11139 C. D.	21	W.	"	Mania, acute	1 mo.	Endometritis, laceration of cervix and perineum	4-19-04	Curettage, excision cervix and perineum
12-10-03	11000 M. G.	28	S.	"	Melancholia, chronic, alcoholic	5 yrs.	Anteflexion	4-20-04	Curettage, uterine stem
12-30-03	11074 R. H.	26	M.	Poor	Melancholia, acute	4 mos.	Endometritis, laceration perineum	4-26-04	Curettage, perineorrhaphy
3-9-04	11270 A. S.	37	"	Fair	Paranoia	4 yrs.	Endometritis, laceration of cervix and perineum	5-5-04	Curettage, perineorrhaphy
10-26-03	10851 C. S.	36	"	Good	Dementia præcox	3 mos.	Endometritis, laceration of cervix and perineum	6-21-04	Curettage, excision cervix and repair perineum
4-15-04	11368 R. R.	39	"	Fair	Paranoia	17 yrs.	Movable retroversion, lacerated cervix and perineum	6-23-04	Curettage, excision cervix, repair of perineum
4-13-04	11358 F. N.	24	S.	"	Dementia præcox	1 yr.	Anteflexion	6-9-04	Curettage
4-5-04	11334 S. M.	38	M.	"	Dementia præcox	1 mo.	Rectocele laceration cervix and perineum	6-28-04	Excision of cervix and perineorrhaphy
3-17-04	11291 O. K.	22	S.	"	Dementia præcox	4 days	Movable retroversion	6-9-04	Curettage
1-13-02	11110 M. B.	42	W.	"	Dementia paralytica	1 yr.	Complete laceration of perineum	7-19-04	Repair of laceration
4-22-04	11300 T. M.	31	S.	"	Mania, acute, recurrent	2 wks.	Endometritis	7-23-04	Curettage
10-23-04	10846 L. R.	31	M.	"	Dementia præcox	2 wks.	Laceration cervix and perineum	7-23-04	Curettage, excision cervix and perineum
6-29-04	11604 N. F.	32	"	"	Dementia præcox	5 yrs.	Endometritis, laceration of perineum	7-30-04	Curettage, perineorrhaphy
4-21-04	11382 C. K.	33	"	"	Dementia præcox	2 mos.	Endometritis, laceration of cervix and perineum	8-29-04	Curettage, excision cervix and perineum
3-30-04	11323 L. L.	28	"	"	Melancholia, acute	6 yrs.	Anteflexion	8-29-04	Curettage

MINOR OPERATIONS

Result of operation	Physical improvement following operation	Mental improvement referable to operation	Discharged	Result Mental	Remaining in hospital	Remarks
atisfactory	Slight	Slight			2–1905	Slight improvement
"	"	None			"	" "
"	Marked	"			"	" "
"	"	Slight			"	" "
"	Slight	None			"	" "
"	"	Slight			"	" "
"	Marked	None			"	" "
"	Slight	"			"	Unchanged
"	"	"			"	"
"	None	"			"	Slight improvement
"	Slight	"			"	" "
"	"	"			"	" "
"	Marked	"			"	" "
"	Slight	"			"	Unchanged
"	"	Slight			"	Slight improvement
"	"	None			"	" "

SURGERY FOR THE RELIEF OF INSANE CONDITIONS.*

By Max E. Witte, M. D.,

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Medicine and what thereunto belongeth is a science in theory only; its application in practice is an art and as such is not subject to closely and clearly drawn rigid laws according to which it moves and has its being. Even theoretically as a science it, or our knowledge of it, lacks the comprehensiveness and definiteness which would warrant us in expressing it under the form of an equation. Our judgments are chiefly qualitative and then often imperfect, and it is rarely we can apply quantitative standards of measurements. And this imperfect status of our profession should occasion no surprise or painful chagrin when we remember the incomplete, or even frequently rudimentary, condition of the subsidiary or fundamental sciences on which medicine is based. While only vanishingly slight certain knowledge obtains in the domains of physics and chemistry, so that even the nature of its subject is not known but a matter of dispute or fancy, the difficulties and obscurities in the way of our understanding multiply as we ascend the ladder of the sciences in our quest on the trail of matter evolving onto higher planes. In the expansion of the various biological sciences, we can see things as through a glass darkly; can conjecture and note trends and dispositions, and occasionally break out a solid block for our certain knowledge and place it under the reign of law, but in much we must be content to approximate reality as closely as we may. Complete evidence is lacking to form just such judgments, or, mathematically speaking, too many unknown quantities for which we as yet have no equations enter into the problem. We deal with the phenomenon, but phenomena are illusive and modified by the individual observing and interpreting mind. But this should not engender in us a paralyzing pessimism to annul our efforts, but on the contrary should arouse our combativeness, spur us on to search for the missing equations, and to victorious achievement.

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At the same time we should be careful to abstain from prejudice in matters still under judgment, to eliminate the personal equation, and above all avoid a fossilizing dogmatism to blind us; but on the contrary, we should cultivate a critical and conservative mental attitude, ever ready to accept the true and reject the false, until the touchstone of experience in time clarifies our knowledge. Amongst the problems of this character, I would classify that of surgical intervention in alienated mental conditions.

So much controversy, so many claims for and against, so much partisan acrimony, so many discordant statistics, based apparently on diametrically opposed experience, envelopes this subject, and this a subject on which one would on first cast expect certainty, since coming under objective experience, that we, looking at the matter philosophically and unbiased, cannot avoid the conclusion that these various claimants have been hasty and have formed hard and fast conclusions on insufficient evidence and that at best their dicta merit no greater consideration than provisional opinions, and should be so considered. One source of error in the claims of those who believe in the vast beneficence of surgery in the insane is, in my opinion, the omission of the element of time. This is an important omission, and I have been particularly impressed that this is true in a number of cases to the point in my own experience, to which I shall refer later on.

Again, I am convinced that in certain cases wherein surgical procedures were beneficial and followed by amelioration and perhaps restoration in the mental condition, this happy result is not so much due to the premeditated and planned removal or correction of foci of irritation as to the operation *per se* and its consequent crisis in the organism, with its attendant changes in innervation, circulation, nutrition, and metabolism. Improvement in many cases in whom I operated for the relief of morbid conditions other than mental, bear me out in this; moreover, we find similar experience in other fields of surgical work. I may mention only the good results following simple abdominal section in tubercular peritonitis.

Again, it is a matter of sufficiently frequent observation of those who have had considerable experience with the insane, that crises other than of surgical origin play a remedial rôle. I well remember the case of a woman, some 35 years of age, who had

been subject to chronic mania for a dozen years or more, who was much disordered and disturbed, with extensive and apparently constantly increasing mental deterioration, who even for years had had no comparatively quiet or lucid intervals, but who was continuously noisy, disorderly, destructive, and slovenly, unable to comprehend her condition or situation in time or space or to frame an intelligent reply to a simple question, who had been considered hopelessly insane and incurable for years, who was attacked by acute lobar pneumonia and for a number of days was gravely ill. This woman, with the development of pulmonary inflammation, became quiet and orderly, and not only this, but completely rational and clear mentally. She remained sane after convalescence from the pneumonia, and after a sufficient period of observation, during which she manifested no mental disorder or even observable impairment, she was discharged recovered. She remained well some four years afterward, and so far as I know is well to-day. In this case mental restoration was so closely connected with the pneumonia that the conclusions seems inevitable, that it was *propter hoc* and not *post hoc*.

In another instance, in the days of airing courts surrounded by high enclosure, a man sought to escape over a fence fourteen feet high by climbing a large silver maple growing near and letting himself down on the other side by the overhanging branches. Instead of bending, the branch broke and the patient fell headlong a distance of thirty feet and broke his arm. Now the strange feature of the case comes in. This patient, who had been considered hopelessly insane for years, recovered promptly, not only from the fracture of the humerus, but also mentally.

Now a few swallows do not make spring, and the lessons drawn from the aforementioned cases should not induce us to adopt pneumonia and the forcible precipitation from a height into our remedial armamentarium for the treatment of the insane. I have simply referred to these cases out of a number to illustrate my contention. They no doubt can be easily duplicated by others in the experience of my auditors.

Now as to surgery in the treatment of the insane, we may premise the discussion of the subject with the axiomatic statement that it should be employed under precisely the same con-

ditions and circumstances in the insane as in the sane. When or wherever the life of the patient can be prolonged or his health or comfort be promoted by surgical intervention, it is our solemn duty to aid him in this manner. Anything less is remissness; anything more, rashness. I think we are all agreed on this, and no one should find fault with this position. Should we, therefore, find in the insane morbid or abnormal conditions calling for operative or other surgical measures, we should employ them, primarily in the hope to benefit and improve the patient's general health, and secondarily, to thereby increase his chances for mental improvement.

This is "safe and sane" practice, and I may say, only by way of parenthesis, that the insane are entitled, justly entitled, to the benefit of the same diagnostic and surgical skill, antiseptic precautions, care, and nursing as the sane.

There are, however, two fields of surgical endeavor to which psychiatrical importance has been attached and wherein the experience of observers diverge and opinions differ. These subjects at issue are cerebral as the one and pelvic in the female as the other, for the relief of insane conditions. And since the views are so discordant touching these matters it seems to me to be the part of prudence to suspend definite judgment until time and trial shall bring in more extensive and reliable evidence. At least let our conclusions for the present be only provisional and capable of being modified and changed by subsequent developments bearing on this question. For the further elucidation of the subject it will be important, nay necessary, that we should carefully observe and faithfully report cases having bearing, in order that our own experience may be enriched and interpreted by that of our fellow-worker in the field. Above all, let us be fair and impartial and avoid partisanship. It is so human to take sides, to color and exalt testimony on the side we advocate, and to neglect evidence against it.

It is in the field of cerebral, or rather cranial, surgery that we perhaps most frequently encounter importunities of friends to do something, and this whether or not there are indications in the way of old fractures of the skull with depression, or even a well-defined history of cranial injury. Scarcely a week goes by that I am not urged by some solicitous friend to examine Mr. X. with

a view of having something done in an operative way for his relief. The request is usually explained that he once upon a time when a small boy fell on the ice, or had been crowded against the stall by a horse, or that the doctor had made the statement that his insanity is due to "clot on the brain." Now these people no doubt feel considerable disappointment because I cannot fall in with their views and refuse to operate or sanction operation without marked and well-defined indications for the same. It is very natural that friends should be anxious for the relief of their patient, and like a drowning man grasp at straws. Their feelings override their judgment, especially as the latter is uninformed on the matters at issue, and led astray by highly colored and sensational reports finding their way into the lay press, of brilliant achievements, by some bold operator, bordering on the miraculous, in the cure of insanity. Akin to this is the frequently heard clamor for vertebral readjustment, having its origin in the osteopathic intellectual occultation.

However, we meet sufficiently often with cases of unmistakable cranial or cerebral traumatism, with fracture and perhaps depression of fragments of the skull. Usually the injury occurred long ago and insanity developed subsequently and is, indubitably or reasonably certain, consequent or dependent on it. Mental disorder increases and the friends or the patient himself is very urgent to have the source of his mental derangement, as they believe, removed by operation.

Now what can we say to these people? What does experience justify us in advising? What can we promise? What hopes hold out?

It is indeed a question of vast moment that stares us in the face for our solution. On the solution depends the weal or woe of a human being, and not only one but many may be vitally affected by it. The ruin or salvation of a human life is no small matter, but, to those concerned, of the greatest importance. It behooves us, therefore, to bring forward to the solution our best efforts and all the light we can obtain in experience or otherwise, so that we may decide justly and do what is needful. I have been much interested in the subject, and during the many years of my service in behalf of the insane have observed the results not only of my own work in this line, but also that of others; and amongst these

were some of the deservedly most famous surgeons of our country. As a result there has been born and grown within me a pronounced and critical conservatism in thought and action, if not a despondent pessimism in all cases of mental disturbance where a considerable period has elapsed since the receipt of the injury.

I may be pardoned if, as partly illustrative of the subject, I briefly outline from memory the history of two cases upon which I operated, and two cases operated upon by other surgeons, but subsequently coming under my care. These cases have been selected from quite a number, partly as typical of a class and partly as illustrative of some things I have said, and to serve as a text for a somewhat more minute consideration of the question involved.

CASE I.—A young man, some 21 years old; occupation, farmer; strong physique; vigorous bodily health. Some eleven years before admission was kicked in the head by a vicious horse. He was unconscious many hours after receipt of injury, but gradually rallied and regained consciousness and what appeared to be his normal condition, with the exception that at times he appeared confused, also irritable in temper, and suffered pain in the head. He, however, learned readily at school and in intelligence was up to the average. However, as he advanced in years, mental peculiarities became more prominent and for some time preceding commitment mental disorder was practically continuous and he was subject to periods of active disturbance, maniacal in character, with violent and dangerous tendencies. When he came under my observation his condition much resembled the restless, active stage of certain forms of dementia præcox, with an already marked degree of mental enfeeblement. While restless and mischievous, he was oriented and still had some interest in his affairs and matters generally and could converse quite well for a time. His mental condition rapidly deteriorated and he became careless and untidy about his clothing and in his personal habits, indifferent to matters of ordinary concern, vicious and irresponsive to mental stimulation, and apparently drifting rapidly into terminal dementia. There was a marked depression of skull due to fracture at the site of the old injury in the frontal region. No focal symptoms indicating involvement of the motor zone were present. At the urgent solicitation of the friends, although no promises were made or definite hopes held out, the operation of trephining and

raising the depressed portion of the skull was performed under strictly aseptic conditions. The fractured and depressed bone, an irregularly elliptical segment some 1½ inches wide, beginning just above the middle of right superciliary ridge and extending up and backward over frontal eminence some 3½ inches to the coronal suture and overlying in part first and second frontal convolutions, was elevated. Rough spicular projections into brain and membranes were removed completely and dura mater separated from adhesions. The dura was atrophied and attenuated under depressed spicules and permitted examination of pia mater which seemed rather anemic, but was not extensively coalescent with dura or otherwise markedly abnormal; neither was anything found justifying deeper invasion by knife. The recovery from operation was uneventful and from a surgical standpoint all that could be desired.

And psychically now developed the strange features of this case. Upon the operating table had laid down an appearing terminal dement, uncouth, indifferent to all interests, careless, filthy, untidy, silly in manner, and vacant in expression. Issuing from under the influence of the ether this same patient at once manifested mental changes for the better. His expression was brighter and more animated, he recognized and spoke to his father intelligently, and from day to day thereafter improved mentally, became clearer and more active, neat and orderly about his person, took interest in and conversed rationally on home affairs and general subjects of common concern. In fact, at the end of a month after the operation he was so well and nearly normal in every mode of psychical activity that his friends and all interested rejoiced at his apparent restoration. Had his case been reported at this time, it could justly have been claimed as brilliant an achievement as any of the sensational stories occasionally chronicled in the lay press. But, alas! the high-flying hopes were doomed to be extinguished in bitter disappointment. He gradually grew more confused and listless, careless, disorderly, and by the end of six weeks he was as much demented as before, and so far as I know has remained so ever since. The only difference observable has been that after operation the dementia has not been interrupted by periods of more active disturbance with vicious and destructive tendencies, such as were quite common prior to the operation.

CASE II.—Aged 38; intemperate; formerly a private in the regular service of the U. S. Army. Some years before, during a drunken brawl, he was struck on back part and right side of head by a large stone in the hands of his drunken opponent. Ever since he had been subject to epilepsy and this for some time complicated by insanity. When he came under my care, patient was in strong and vigorous health, but subject to epileptic attacks, coming on at irregular intervals, usually in a series of three or four, with active disturbances during which he was vicious, violent, and homicidal, and withal a dangerous and difficult subject. Then he would ordinarily have an interval of three or four weeks of freedom from convulsion and during this time patient was orderly and industrious, and, since dementia had not progressed extensively, rather a bright and companionable patient, without the irritable epileptic disposition being well marked. He complained, however, of pain in the head and soreness at the seat of the injury in the posterior right parietal region where scars and an irregular large depression in the skull, evidently due to fractured and depressed bone, were very marked. He attributed his strange feelings and distress in the head as well as his epilepsy to this cranial fracture, and he undoubtedly was right in this. He furthermore requested an operation for the relief of this condition, although he had been told that nothing definite could be promised him as to results. Being a man of good intelligence, he concluded to take all risks, since his condition could not be made worse but might perhaps be bettered. An irregular triangular deeply depressed section of bone was raised some 4 inches long by nearly 2½ inches wide, extending from apex near the middle of the right parietal bone near vertex of skull obliquely backward, outward, and downward to base at lambdoid and masto-parietal suture and involving the furrow for the right lateral sinus in part and overlying the occipital cerebral lobe. The meninges were found tightly adherent to fragments of skull projecting downward deeply into the brain, besides the lateral sinus was sacculated and insinuated deeply into cerebral fissure, probably due from pressure by the depressed bone below the dilatation. I may say, parenthetically, patient had no psycho-sensory disturbance, but had complained of strange sensations in the head. The operation wound healed kindly, and the result surgically was satisfactory.

Patient generally improved; became better-natured and less irritable, and the queer feeling in the head which had given him considerable distress before disappeared altogether. No sign of epilepsy was observed either by himself or others for a period of some six months, a longer period than had ever intervened between attacks since receipt of the injury. Patient was in high hopes and exuberant spirits in consequence of what appeared his recovery. One evening, however, he had a well-marked attack of grand mal. The convulsion was not as severe as had formerly been the habit, neither was it followed by mental obscuration and disturbance. He remained under observation a few months longer, doing nicely and having no further recurrence of epilepsy either masked or open. He then passed from my observation by escape and I have no further knowledge of him. Whether he continued to do well, with perhaps further improvement, or whether he again became more epileptic and deteriorated is a matter of conjecture. I fear the latter, on account of his former predilection for alcohol, if for no other reason. Attention may be drawn to a few points in this case. The sacculation of the large vein appeared to enter more deeply into cerebral tissue than any projections of the fractured skull, and in my opinion was the more potent and capable of cerebral irritation, oppression, and disturbance. I think that the disappearance of the "queer feelings" after operation was either really due to removal of the obstruction in the venous channel or removal of pressure from psychic centers of sensation. Again, from the brain region involved one would expect some sensory disturbance or hallucinations; especially in the interpretation of visual, muscular, and common sensations in consciousness, but, although patient was gifted with fair descriptive ability, this could not be made out. The "queer feelings" of which he complained were local and there was no evidence of objective projection. My opinion is that the psycho-sensory centers on the injured side had become functionally inoperative through neglect, and that the corresponding centers on the opposite side compensated. May it not be that these higher psychical centers, like the speech centers, functionate on one side only as a rule?

CASE III.—Aged 20; white; slight in build; in good bodily condition. Patient's father, paternal and maternal grandfathers died of paralysis (apoplexy) and the latter had been a hard

drinker. At age of 8 he sustained a severe injury by being struck on the head by a baseball bat in its descent, after it had been flung by one of his mates as high as possible; he was knocked down, but did not become unconscious. Four years later, at the age of 12, the first epileptic convulsions occurred. (It is said, however, that he had convulsions in infancy attributed to worms.) Three months after the establishment of the epilepsy, during which he had weekly attacks, on the advice of the best medical counsel obtainable in his city, he was operated on by that past master in surgery, the late Dr. Christian Fenger, assisted by the advice of an eminent neurologist. They found some depression of skull at the site of the former injury, namely, one irregularly circular 1½ inches in diameter at juncture of sagittal with coronal suture, and the other of same size and similar shape 2 inches back in sagittal suture near vertex, both over superior longitudinal sinus. Both depressions encroach a little more on right side. The name of the surgeon is guarantee that the work was well done, but both Dr. Fenger and his counsellor gave a guarded prognosis, stating that they were not certain that the operation would relieve the epilepsy. Patient had slight convulsions three months after the operation and then the seizures came on weekly as before. Between attacks he appeared bright enough, was industrious and fond of music. Five years ago, *i. e.*, 3 years after the first epileptic convulsion and 7 years after receipt of the injury, insanity became manifest. He became dull and confused and was strange and irrational for days; conceived strange ideas to which he adhered with stubborn pertinacity, was very irritable, quarrelsome, and disposed to contradict others. If aroused in any way, would fly into a passion and be disposed to assault others with whatever was nearest to his hand; would say strange and uncalled-for things; in fact his conduct, disposition, and general manner has been typical of epileptic insanity. There is evidence that a gradual mental deterioration has been going on as the result of the epileptic condition. Much dementia is now present and evidently increasing. Whatever mentality remains is unstable and either much obscured and dulled or explosive in character.

An undoubtedly well-advised and well-done operation was of no benefit, and the fears expressed in the prognosis were well-

founded. However, it must be borne in mind that the operation was performed four years after the injury was received, and after the epileptic habit had become firmly established. Again, while the injury to the head apparently was the basis of the epilepsy and subsequent insanity, it is not unlikely that the patient was constitutionally predisposed to the disorder. His father and paternal grandfather died of apoplexy; maternal grandfather also died of apoplexy after he had been a hard drinker for years, and we know intemperance favors epilepsy in subsequent generations. The patient himself had some convulsive disorder in early childhood, so that it seems reasonable to surmise an inherited neurotic encumbrance which embarrassed the prospects.

CASE IV.—Age 19. Female. In latter part of August, 1904, attempted to drive across a railroad track in front of a train running at 60 miles an hour. She was struck by the train, carried 1000 yards, and thrown into a ditch at the side of the track. She was picked up unconscious, and consciousness was only partially regained. She was taken to a general hospital, and was then very violent, it requiring the united efforts of two persons to keep her in bed. Her movements were convulsive, pupils contracted, sphincter completely relaxed, cutaneous sensibility and planter reflexes lost. In September, Dr. Fairchild, of Des Moines, assisted by the hospital physicians, trephined, with the expectation of finding fracture of internal plate of cranium at site of injury to head in left parietal region; found none, but found hemorrhage; punctured membrane and put in cat-gut drainage. After operation she began to scream, sphincters closed, but no gain in sensibility (intelligence?) could be noticed. Movements lost convulsive appearance and were apparently influenced by volition; could swallow, but refused food; was fed by tube; would scream for hours at a time.

At time she came under my observation, September 29, 1904, she was in a state of active delirium. She could see and hear, but was utterly confused and deranged and had no conception of her situation or surroundings; at the same time she was extremely restless and agitated, biting and tearing everything she could reach. She made no effort to speak and it was impossible to attract or hold her attention. There was apparently complete disorganization of mentality.

Patient had gained a little physically by October 10, and took nourishment better, but no important change had occurred mentally. She remained much impaired, with greater motor activity, legs were in almost constant motion, so that it was impossible to keep her covered. Pupils were extremely dilated and she now was unable to see; could hear loud sounds; attention could not be attracted; uttered cries similar to cephalic cry, or the cry heard in idiocy. By middle of month improvement had advanced so she could repeat parrot-like a few words, and in another week could speak some and recognized physician and nurses, still repeated words, scanning speech. She maintained that her mother was in Kansas City (mother really was there at time of accident). She had no recollection of the accident. She had still much motor incoordination. She could see, but only indistinctly, and objects appeared double. By the end of October improvement had advanced and she had better control over movements and could stand alone; complained of tingling sensations in extremities, especially on the right side; was brighter and began to relate events of her early life prior to accident and to relearn what she formerly knew.

She continued to gain in every way so that by early December she had become a bright and intelligent young woman, with much brightness and sprightliness of thought, as shown in manner and conversation. Some motor impairment remained at time of parole, January 4, 1905, especially in walking, but she had regained good use of arms and hands. Since she has continued to improve.

In this case operative intervention was justified by signs of compression even in the absence of fracture and well-defined focal symptoms. In my opinion, the mental disorder was due to cortical molecular injury and disturbance by the violence encountered in the accident. No doubt cortical malnutrition by pressure from the clot aided. It is evident from the defined motor symptoms that this influence extended to motor zone in Rolandic fissure.

These few cases mentioned more at length, selected from quite a number coming under my observation, illustrate not only my own experience in cranial surgery, but also that of others in this line of work. I think Dr. Burr's paper, read before the 1903 meeting of the American Medico-Psychological Association, on this subject, corroborates this.

The one lesson I think we can safely derive from this joint experience is the maxim: *Operate early,* before the insane condition has become fully developed and fixed. And a little thought will reveal to us that this position is just and reasonable, and consonant with rational surgical procedure elsewhere than the brain. The disturbing influence of a simple depressed fractured cranial segment is either due to pressure with consequent mechanical anæmia of either the underlying brain tissue, or of the cerebral parts subject to counter pressure elsewhere or to irritation from cranial projections and penetrating spiculæ, or to both causes. In either event we expect a grave disorder, not only functionally, but morphologically. We can justly look for malnutrition from lack of blood in the cortex involved with attendant loss of function in the cortical neurons, with whole groups and constellations of cells inoperative, and the mentality depending on the region defective; moreover, mental processes elsewhere wherein the involved region entered by association, are gravely disturbed. If the basal condition is not soon relieved, degeneration of cell and connecting fiber ensues from disturbance of nutrition and functional disease. The irritating spicula or cranial projection may not only cause mechanical injury by disruption of cortical tissue, but may initiate vasomotor disorder and consequent irregular cerebral vascularization, perverted nutrition with disturbance of function, and, if the disturbance endures, organic changes take place which are perpetuated, and the mental disorder based thereon proves permanent, whether the original cause of irritation is removed by operation or not. Of course, still graver is the situation when cerebral tissue itself is more profoundly involved and gross destructive or disruptive effects have occurred in the brain by the trauma. Here in my opinion early surgical interference is still more urgently indicated for fear of future mental alienation if for no vital reason, provided always that we can improve the existing conditions and leave the parts in a more natural state with less danger from subsequent loss or irritation.

I, personally, have felt reluctant to carry the knife into cerebral tissue in the absence of well-defined indications for it. We cannot hope to leave anything but scar tissue in our wake, which perchance may prove more troublesome in the cerebral system than the resultant of the trauma. Of course, each case must be judged

on its merits, and our actions based thereon. There are usually other vital considerations which may help us to decide. The region of the brain involved will have a bearing. Aside from the uncertain and problematical prospects from operation in cases of long standing, it has occurred to me that the usual technique in the opening and replacement of depressed parts of the cranium may in a measure at least be at fault in the production of unsatisfactory results. And especially is there danger of the formation anew of adhesions about the trephine opening or site of operative procedure, involving the meninges or even perhaps the subjacent cortical tissue, with proliferation of connective tissue, subsequent contraction and disturbance and irritation structurally and functionally of the brain. The marked improvement following operation in Case I, and the mental deterioration soon afterward might be considered as pointing to this. Others have come to the same conclusion. Dr. M. L. Harris discusses this question at length in a paper—Journ. Am. Med. Association, March 19, 1904. Dr. Harris commends sterilized silver foil to prevent adhesions. The foil should be aseptic, free from openings, and its edges extend beyond the limit of adhesions. He prefers a replaceable bone-flap to opening by trephine. Hemorrhage must be checked and clots removed before the foil is gently and smoothly put in place. I consider his views and recommendations sound; at all events, our efforts in the future must be towards the improvement of the mechanical part of the work, in order that we leave the parts in as natural condition as possible, and thus more favorable for healing and the achievement of more perfect results structurally. It goes without saying that the operation should be performed under strictly aseptic conditions only. It would be well-nigh inexcusable to set up a meningitis by infection.

What can we say to friends or patients who urge operative measures for the relief of the insane condition? My practice, in which I am more and more confirmed as time goes on, is this: I tell them freely and frankly in cases of long-standing trouble, and they are usually of this character, that I can promise them nothing, and that the operation itself is grave and not free from risks to life; that if they, however, wish to assume such risks in the hope of possible improvement, I am always ready to operate and do what in my judgment may be deemed necessary, or, if

they prefer some other surgeon, I will have no objections, and will do what I can to further their wishes.

I do not know what more I can say with the present status of the subject. I certainly do not think it right to raise illusive hopes, as is frequently done by members of our profession who are surgeons merely with the *furor secandi* strong upon them.

On the other hand, it must not be overlooked that cases of recovery do occasionally occur after operation; as witness some enumerated in Dr. Burr's list, and a case recently reported by Dr. Hedges in *Medical Record,* January 28, 1905. I am quite certain, however, that these cranial operations are more frequently performed than we suppose, but the results not being satisfactory, are not reported. We can readily expect this, for it is only human to publish our successes and neglect mention of our failures.

The other great surgical field for which psychiatric importance is claimed is that involving the female pelvis and its contents. It is not my purpose to burden these pages with the report of cases or even statistical figures gathered from a rather extensive series operated on either by myself or others, but coming under my immediate care and observation. Suffice it to say that my views touching the subject have quite early crystallized into the following maxims, which are the guides in my practice to-day:

1. Do not expect relief in the mental condition from operative interference, in the absence of actual disease of the pelvic organs requiring surgical aid.

2. In pelvic diseases complicating insanity often much good, in the way of improving general health and comfort and thereby aiding and promoting mental restoration, may be accomplished by less heroic measures than surgical.

3. In the insane, as in the sane, pelvic disease disturbing or impairing patient's health, or even seriously the comfort or threatening life and remediable by surgical intervention only, should receive surgical aid promptly and efficiently.

4. To benefit coming generations, surgical measures to annul procreative power are indicated and justified in certain types of insanity, deficiency and degeneracy depending on an inherited and inheritable constitutional tendency or abnormality.

In amplification of my first proposition, I may say that I am well aware that it is diametrically opposed to the views of some

other and no doubt competent and honest observers. We remember the claims made by some, of brilliant results from operative gynecological work achieved in the cure, or at least great improvement, of the insane. This was some years ago. I do not hear much, if anything, from the field nowadays. Has more recent experience not borne out the earlier claims? I will confess that I was also infected with the enthusiasm then in vogue on this subject, and expected much from oophorectomy and artificial menopause in patients who were more disturbed and the mental disorder aggravated during the menstrual period, but in whom no positive pelvic diseases or organic alteration could be demonstrated. My hopes and labors for relief of the insane condition were in these cases doomed to bitter disappointment. Not that I even now regret the sacrifice of all these ovaries, since in many of these cases whatever good I have done will redound to the welfare of future generations in accordance with proposition 4, and in others there was marked relief of sexual visceral irritation, and no doubt increased comfort to the patient.

Upon due and mature reflection, we cannot reasonably expect recovery or even material amelioration in the mental condition by the forcible ablation of a physiological function, especially when we consider that these people are usually afflicted with dementia præcox or some other form of mental alienation or obliquity depending on blight and structural or molecular changes in the cerebral cortex. There is no achievement without proportional sacrifice, and without doubt the burden of this fell heavily on the female of our species, when man abandoned the horizontal for the perpendicular plane and walked upright in the image of the Deity. Yet, when all is said, there has been an inclination to exaggerate the influence of the genetic function in the life of the woman. With woman in health, the accent lies on the second syllable and not on the first. On the other hand, in actual disease of the generative organs, causing distress, or discomfort merely, the general health suffers and restorative powers are diminished. Even when patient is not conscious of disease, more or less continuous nervous impulses emanate from the site of disease and cause derangement of the nervous mechanism by irregular reflection or they even gravely affect for ill the prevailing states of feeling by the registry of tidings of evil below the threshold of consciousness. All the more

is this true when the pelvic disease is sufficiently grave to cause pain or conscious discomfort. It may then be the locus of irritation which causes or perpetuates insanity, and the latter cannot be relieved until the source of trouble is removed.

That this often may be done by non-operative measures goes without saying. Topical medication, massage, baths, electricity, heat and cold, all have important remedial functions in the treatment of these cases in bringing about secondarily either restoration or great relief in the disordered mental condition. Where, however, the pelvic disease is of such a grave organic character that the aforesaid agencies fail, surgery has a place, and that an exalted place. The insane, as the other citizens of our great country, have the inborn right to liberty and the pursuit of happiness. If this undeniable right can be restored to them by the use of the knife, we are indeed remiss to duty if we do not use it.

Now as to the employment of surgical measures to remove generative power in certain types of mental involution, I would not restrict it to the one sex. But, as Kipling says, "this is another story."

OBSERVATIONS ON SOME RECENT SURGICAL CASES IN THE MANHATTAN STATE HOSPITAL EAST.*

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The question of surgical interference upon persons of unsound mind has always been an interesting and much disputed one, and as the older surgeons taught that an insane person was a very doubtful subject for operation, comparatively few were performed upon persons of this class.

That insanity is a serious and important complication with which the surgeon has to deal cannot be doubted, still the improved facilities and technique of recent years have lessened the dangers to a marked degree, so that even extensive major operations are now performed with very gratifying results, both physical and mental.

Recently in our hospital, under the superintendency of Dr. A. E. Macdonald, several major operations have been performed by Dr. Wm. C. Lusk and Dr. Ramon Guiteras, of the Board of Consultants, with a large percentage of permanent cures and palliative results in most instances.

A preliminary report of a successful operation for the radical cure of prolapse of the rectum of sixteen years' duration in a case of primary dementia was published in the *Medical Record* of June 6, 1903. This operation consisted in anchoring the sigmoid flexure to the anterior abdominal wall (sigmoideopexy). At the time of writing the report only ten weeks had elapsed since the date of operation, and the patient was up and about without any return of the prolapse. The patient now, two years and three months since the operation, is still up and about and there has been no evidence of a recurrence. His physical comfort has been greatly enhanced, and his mental condition is much more cheerful.

*Read at the Sixty-first Annual Meeting of The American Medico-Psychological Association, San Antonio, Texas, April 20, 1905.

Since the above operation, several others have been performed of a similar character with uniformly good results. Reports of the same will probably follow in due course.

The question of hernia is an important one in hospitals for the insane. About one male patient in every eighteen admitted to our hospital suffers from hernia in one form or other and of varying sizes. These cases always tend to become irreducible with consequent danger of strangulation. Treatment by the application of a truss is often unsatisfactory, and in many cases the physical annoyance to the patient from a hernia of long standing, with its tendency to increase in size, is an important feature; and it has been noticed that its presence often aggravates the morbid mental condition.

Several operations have been recently performed at this hospital for the radical cure of inguinal hernia of long standing, some of them of large size. A complete cure resulted in every case; and the marked physical comfort following has been very gratifying; and now, after the lapse of fourteen months, in no instance has there been a recurrence.

The uniform good results obtained in all the cases were, no doubt, largely owing to the special attention paid to the points of technique employed. The operation selected was that practiced and recommended by Bassini.

The average time that the patients were under the anæsthetic was one hour and ten minutes, the operation proper lasting one hour. Following the operation, if the temperature did not rise above 100° F., the wound was not dressed for a week, but in case of a rise of temperature, with continuance above this point, the dressing was removed, the wound opened up and irrigated, and dressed daily until union was complete.

This precaution was observed because the insane frequently have a subnormal temperature when apparently in very fair physical condition, and the febrile reaction after operation is often not attended by such a marked rise of temperature, even when suppuration is present, as is usually observed in cases not the subject of mental derangement.

In one case a hernia into the bladder walls, which is a rare congenital condition, was encountered, but required no special consideration other than a careful dissection of the sac. In every

instance the patient reacted well from the primary effects of the operation, and passed on to recovery without any special incident. Primary union occurred in most of the cases; in the others there was some sloughing of the cellular tissue adjacent. The resultant firm cicatrix following this condition seemed to render the operation more successful, although avoidance of infection and healing by primary union are considered important essentials in the prevention of recurrence.

The shortest time from the date of the operation until the wound was entirely healed was thirteen days, and the longest, thirty-one days, although it was our practice to allow the patient to remain in bed about a week longer in order to secure a firm cicatrix, and facilitate the strengthening of the relaxed abdominal muscles.

The special points of technique employed and which should never be omitted, consisted in anchoring the sac by firm suture to the abdominal wall at the internal abdominal ring, accurate approximation in suturing and thereby lessening tension, careful dissection of the sac, and the avoidance of bruising the tissues during the manipulations.

Authorities on the subject of hernia have stated, that operations may be performed between the ages of four and sixty. Instances have been recorded where the operation has been performed two days after birth, and recently a case has been reported where a successful operation for strangulated hernia was performed under local anæsthesia upon a patient aged ninety-seven.

Among the cases referred to, the youngest was twenty-three and the oldest sixty-three. It is worthy of note that primary union occurred in all the younger cases, and more or less suppuration in those over sixty years of age. This would seem to indicate that advancing age predisposes to suppuration by rendering the tissues more vulnerable to attacks of micro-organisms of suppuration, and as evidences of senility frequently present themselves much earlier in the insane, it is important that this should be borne in mind when recommending insane cases for operation.

That there is always danger of a hernia becoming strangulated was exemplified in a case of chronic mania, a woman, aged thirty-six, who suffered from an umbilical hernia of long stand-

ing. Following a period of excitement the hernia protruded and could not be reduced. Symptoms of strangulation suddenly developed, the prolapse became tense and tender on pressure, pain was constant, and vomiting supervened. Hot compresses applied to the hernia and several enemata of warm water, with a full dose of morphia, relieved the more distressing symptoms, but the patient passed rapidly into a condition of collapse. After a careful examination it was decided to operate at once. The hernia was exposed; the gut, together with a mass of omentum, was found to be strangulated at the edge of the ring. The former was deeply congested and œdematous. This condition was treated by hot compresses about the gut, until the circulation became partially re-established. The mass of œdematous omentum was tied off, the intestine returned to the abdominal cavity, and the operation for radical cure completed.

The operation was long and tedious, lasting two hours and fifteen minutes, but the patient reacted well, and recovered without any special incident. She is now in excellent physical condition, but being a chronic case, there is little change in her mental state. A few hours' delay would have resulted in the death of the patient.

Malignant disease of the testicle presents many points of interest to the surgeon, especially from the standpoint of diagnosis; and as regards the operation of castration, either as a permanent cure or palliative measure. The lack of definite information on the subject tends to increase the interest. Statistics show that the results do not differ materially from those obtained by operation on sane patients; some cases are followed by a permanent cure, in many there is sooner or later a recurrence of the disease; while in others, a very temporary relief is the result. The cases that are likely to recur are those in which there is involvement of the epididymis, with thickening and infiltration of the cord, and those in which the scrotum is adherent.

A case of sarcoma of the testicle, following an attack of urethritis and epididymitis, occurring in a patient, aged twenty-two, convalescing from acute melancholia, presented such striking diagnostic and prognostic features that his history will be briefly cited.

Following the attack of epididymitis the right testicle gradually

increased in size until about three weeks prior to operation, when it somewhat suddenly showed evidences of greater enlargement. It became firmer and heavier; there was some thickening of the cord, attended with increased vascularity of the scrotum and adjacent tissues. There was little pain except when the patient stood for any length of time, and this was always relieved by lying down. The growth was uniform in size and heavy, and there was some enlargement of the lumbar lymphatic glands. The patient showed little evidence of cachexia. About thirty weeks after the testicle first began to enlarge it was decided to operate. The organ was found to be completely infiltrated with the sarcomatous growth and was removed; the cord was much thickened and the scrotum adherent.

The wound healed gradually and the patient returned to his work in the tailors' shop, but about fifteen weeks following the operation it was noticed that at a point about half an inch above where the cord was ligated there was some swelling and tumefaction of the tissues. This gradually increased until the mass became larger and the skin ulcerated. Twenty weeks after the primary operation, a second was performed, which consisted in making an incision to the bottom of the mass and curetting it away, but following this the growth infiltrated rapidly, the patient became emaciated, and died of lobular pneumonia and sapræmia twenty-five weeks after the primary operation.

The second operation was performed simply as a palliative measure, as there could be but little hope of permanent relief unless the secondary growth were located in the scrotum.

In this case the principal diagnostic considerations pointing to its malignancy were: the gradual and uniform enlargement up to a certain point, when there occurred a somewhat sudden increase in size; the firmness and heaviness of the testicle, and the enlargement of the lumbar lymphatic glands. The lack of constant pain, the vascularity of the scrotum, and the late development of cachexia differentiating it from carcinoma.

From the standpoint of prognosis: the history, the involvement of the epididymis with thickening of the cord, and the adhesions to the scrotum were the important features that pointed to a recurrence.

The results in this case did not differ materially from those

often experienced. As a palliative measure the operation would seem to be justified as a period of fifteen weeks passed, during which the patient was comparatively comfortable, and without operation it is probable he would not have lived so long, although from studying such a case the malignancy of certain neoplasms of the testicle is forcibly demonstrated and better appreciation had of the axiom handed down by the older surgeons to the effect that the patient who refused operation survived the castrated one.

The boundary line between operable and inoperable cases is from time to time the subject of discussion, and it still remains an open question whether some of the operations performed for the prolongation of life in cases of malignant disease were justified; on the other hand, it is quite probable that palliative procedures might oftener be resorted to.

Reports have been made of inoperable cases of malignant disease of the uterus where the internal iliac arteries have been ligated with prolongation of the patient's life. The external carotids have been bilaterally tied in cases where the neoplasm was nourished by these vessels. The common carotid has also been ligated, but the effect of such a procedure upon the cerebral circulation renders it a serious undertaking.

In one instance in our hospital the latter operation was performed for an inoperable sarcoma of the face of enormous size, originating from the infraorbital region. The patient was a case of dementia secondary to chronic melancholia; aged sixty years. He had been insane twenty-seven years. The growth had existed for about nine months but grew very rapidly, and at the time of operation was undergoing extensive ulceration. The operation consisted in ligating the artery just below the bifurcation in the triangle of election. The occurrence of troublesome hæmorrhage from some of the smaller vessels beneath the angle of the jaw caused some delay, so that the operation lasted two hours.

The patient, however, reacted well from the anæsthetic, partook freely of nourishment, and for a time seemed brighter mentally than for some months previous; but died of lobular pneumonia on the third day following operation. The patient lived too short a time for any definite opinion as to the general advantages of the procedure to be determined. The effects, however, upon the growth for the time were marked; the ulceration dimin-

ished, and the neoplasm lost to a pronounced degree its turgid and angry appearance. The operation in similar, but more favorable cases, would seem to be a valuable palliative measure.

The operation of trephining is an ancient one and has been handed down by the Fathers of Medicine. Skulls have been found in excavations which show that savage tribes performed the operation with considerable skill.

At one time the operation was done by enthusiastic operators who paid but little attention to indications or focal symptoms, but at the present time a more conservative view is taken and the operation is not performed unless either evidences of compression exist, or the focal symptoms localize the lesion. Surgical operations upon the cranial cavity of the insane have always been absorbing in their interest; and some authors quote figures which attribute alleviation of the mental condition, in a large percentage of cases, entirely to the operation; such figures are misleading, as in the acute or recoverable forms of insanity a large percentage of cases pass on to recovery during the first year who have not been operative subjects. However, when an operation, and particularly one on the cranial cavity, has been performed upon a patient who has been insane over three years (the limit after which alienists agree that recovery rarely occurs), and the operation is a success from the surgical standpoint, and is also followed by an improvement in the mental condition, the subject is approached with more than usual interest. The following case is illustrative:

A male patient, aged forty-two, who suffered from melancholia of four years' duration, which developed after operation for appendicitis and appendicular abscess followed by post operative peritonitis. His insanity was of the suicidal type, with impulsive tendencies, and hallucinations of sight and hearing, followed by suspicion and hypochondriasis.

About December 1, 1903, he was noticed to be gradually failing mentally, was dull and confused, complained that he could not read the paper as well as formerly, that the letters seemed blurred; was unable to swallow properly, owing to the loss of power in the muscles of the throat, saliva dribbled from his mouth, and his speech became inarticulate.

January 7, 1904, he suddenly became excited, rushed about the

ward, talked in a rambling and exalted strain, said that he was the strongest man in the world, and claimed to have an inspiration from God. Was placed in bed, but turned the bedding upside down, and threw the bed clothes on the floor.

This excitement continued until January 10, 1904, when at 10.15 a. m., he was seized with an epileptiform convulsion, confined to the left side of the body. At 3.45 p. m., he got out of bed and stood up, when he was again suddenly seized with a convulsion, and falling forward to the floor, struck the frontal region of his head on the left side above the eye. When replaced in bed his pulse was slow and full, rate 70, and he was unconscious.

January 10, 7.00 p. m., still unconscious, eyes drawn to the right, pupils widely dilated, temperature 98.6°, pulse 70, respiration 22.

January 11, 9.00 a. m., temperature 98.6°, pulse 92, respiration 23; still unconscious; very restless, especially so when the seat of injury is pressed upon. Pupils dilated and do not react to ordinary light, eye balls drawn to right, shows marked muscular resistance, cannot be induced to protrude his tongue, no embarrassment of respiration, bowels moved involuntarily four times during the night, passed an enormous quantity of urine involuntarily.

January 11, 11.00 a. m., patient winces and partly rouses up when seat of injury is pressed upon, occasionally draws up his legs, rubs his head with his hands, at times groans, champs his teeth, answers yes or no only when roused by shouting in his ear. Passes urine and fæces involuntarily, sleeps heavily, pupils dilated and only react upon strongly transmitted light, is apparently deaf, and is unable to extend his limbs without pain, reflexes markedly exaggerated, suffers from choked disc.

January 12, patient remains in much the same condition, except that he cannot be roused by shouting in his ear; his breathing is stertorous.

It was recommended to operate at once by trephining over the area of injury, as it was possible that a depressed fracture existed, although the gradual development of the symptoms pointed to a condition of cerebral pressure from increased intracranial



CEREBRAL PRESSURE
(prior to operation)



CEREBRAL PRESSURE
(following operation)



SARCOMA OF THE FACE

tension, rather than to cerebral compression from a depressed fracture.

Patient was anæsthetized; the trephine was applied just above the seat of injury, and a button of bone removed. The tissues were found to be the seat of a hæmatoma, but no fracture existed. Immediately upon removing the button of bone it was noticed that the dura bulged into the opening from the intracranial pressure. The dura was then incised, which was followed by the escape of about six drachms of clear fluid.

Several layers of gauze were then introduced beneath the dura, and allowed to remain in as drainage, the periosteum being brought together over the drain by means of a continuous cat-gut suture. The wound was dressed, and the gauze drain allowed to remain for twenty-four hours.

Following the operation the temperature rose to 99.4°, pulse 72, respiration 20; after this the temperature approached the normal, and continued in this way until recovery was complete.

After reacting from the anæsthetic, the patient spoke a few words, but was restless and confused for three or four days, when he began to realize his surroundings, and recognize those about him. He gradually improved until January 24, when he had a general convulsive seizure, which was attributable to reflex causes, he being constipated and having eaten too heartily, with a brain in a hyper-sensitive condition.

Following this, upon one occasion, he complained of pain in the forehead, radiating down the left arm, which was relieved by a dose of anti-pyrin and sodium bromide. For some weeks following the operation he continued in a hyper-sensitive and hypochondriacal condition, but gradually and progressively improved; took notice of everything going on about him, kept himself well posted on current events, became cheerful, good natured, would recall his feelings prior to the operation, and described them accurately. Had no more depressed periods, suicidal impulses, or convulsions; gained in weight, anæmia disappeared, conversed readily, spoke distinctly, eye sight good, no blurring of the letters, swallowed readily, suffered no pain in the head, and made a complete recovery both mentally and physically.

It is interesting to note that the embarrassed breathing continued during the operation until the dura was incised and the

effusion allowed to escape, almost immediately the stertor ceased, the respiration assumed a regular rhythm, and the pulse became steadier. This was in accordance with observations and experiments, for it has been shown by recent observers, that as long as the vasomotor system maintains the blood pressure at a higher level than the intracranial pressure, the respiratory center will be nourished and perform its function. If the blood pressure falls below the intracranial pressure the function of the respiratory center will be interfered with, and rapid cardiac action and low blood pressure ensue.

The development of the period of excitement with exaltation, attended by cerebral symptoms and followed by convulsions, brought up the question of diagnosis of the mental state. Had we to do with a case of paresis? The previous history of absence of somatic symptoms and the rapid development of pressure symptoms, as compared with those of paresis, were the determining factors in the diagnosis.

The occurrence of the epileptiform seizure following the operation suggested the possibility of the existence of epilepsy, but this was rendered extremely improbable by a careful inquiry which demonstrated the absence of previous seizures. The development and final outcome of the case warranted the diagnosis of increased intracranial pressure due to causes operating from within the cranial cavity.

It is not the object of this paper to discuss the pathogenesis of intracranial effusions, but when we bear in mind that the pia-arachnoid membrane is serous in character, being covered on its outer surface by endothelium; that it is the disposition of morbid processes, as shown by numerous autopsy findings, to affect similar structures throughout the body, and that the patient for a considerable period suffered from post-operative peritonitis, it is not improbable that the same infection which involved the peritoneum also attacked the pia-arachnoid, inducing hyperæmia in that structure, which was subsequently followed by the accumulation of serous fluid. The involvement of serous structures following general systemic infections is a line of investigation from which much has yet to be heard.

Although in operations upon the insane many difficulties are encountered not experienced in dealing with cases of sound mind,

particularly in the line of profound exhaustive states, early senile changes, and more requisite watchful care in the after-dressing and treatment, yet the results obtained fully demonstrate that surgery, in carefully selected cases, is one of the valuable means at our command for the alleviation of physical suffering, and, in many instances, if judiciously employed, will also be attended by an amelioration of the mental state.

Clinical Psychiatry.

THE MAKING OF PSYCHIATRIC RECORDS.

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I.

It would seem almost a thankless task to discuss the subject of history-taking, of the examination of patients, and of the keeping of psychiatric records, and yet there are several reasons why such a discussion may not be without value, especially in view of establishing a department of Clinical Psychiatry in this JOURNAL. It is not the aim of this paper to suggest a programme or to present anything particularly new, but merely to recall as emphatically as possible a few familiar and self-evident facts which are often enough neglected in practice,—perhaps because of their very familiarity and obviousness. Every year a large amount of valuable clinical material is lost, particularly, it would seem, in America and England, because of the relatively small number of men in psychiatry, who give themselves the trouble to make observations which are on a level with those of their colleagues in other departments of medicine, and of the still smaller number who make records of their observations which are worthy to be preserved.

Naturally a great part of the work connected with the making of histories falls upon the younger men of the service. In their medical school or general hospital careers, the importance of detailed anamnesis and examination was duly emphasised and they were armed with rational methods of observation of physical disease. How sadly incomparable and inadequate are oftentimes the instruction and methods which are furnished to those who later come for their special work to hospitals for mental diseases!

Insanity in any form is to be reckoned with the severest diseases to which man is subject, it is apparently increasing in most civilised countries, in medicine there is no subject which demands more careful study, and yet it has always been and still remains the subject about which least is known. The very facts of the difficulty of the task and of the relatively little which is actually

known should only stimulate to a more conscientious, deeply painstaking interest, and not to a satisfied apathy or *laissez-faire*.

It is with the hope that in reviewing a more or less familiar topic some points may nevertheless appear which will prove suggestive to some brother who is putting together his first psychiatric records, that these pages are written.

A casual perusal of the clinical history of a mental case selected at random, gives one as a rule one of three impressions.

(1) One feels that the writer has set down one after another a lot of isolated facts and symptoms without synthesis or analysis; he has given a superficial recital of events without drawing conclusions and has left a weak and anæmic record from which it is impossible for any one else to form an idea as to the nature of the case.

(2) In a second history one is at once conscious that the author has approached the case with a strong *idée préconçue*, and has more or less moulded the elements of history and examination to fit the disease-picture which he has unconsciously started out by assuming, rightly or wrongly, that the case presents. In this instance one has no trouble in following the deductions of the history writer, but one is troubled by the question,—Would possibly a second observer with a different *idée préconçue* have constructed from the case with equal facility quite a different clinical picture?

(3) Finally one reads a history in which it is apparent that the author has attempted to approach the case with a virgin mind, and has tried to construct a synthetic history of a group of morbid phenomena, their relations and significance. He has endeavored to show in what manner and degree the diseased psyche departs from the individual norm, and has drawn up his premises, so that the conclusion, if a conclusion be possible, will rather deduce itself, as a result of the comparative and adequate valuation of the clinical signs as they present.

The histories which give rise to the third impression just described, are unfortunately in the minority.

II.

A fixed idea with which many men begin their history writing is that the prime aim and object of the history is to establish a

diagnosis, to give a *name* to the disease, which is supposed to contribute something to the knowledge of the condition. This is an idea which must, on general principles, be combated. The fight from the beginning in psychiatry has been over names and classifications. Let us notice for a moment some of the results to which this conflict has led.

For 6000 years the tripartite symptomatologic classification—*Melancholia—Mania—Dementia*, based upon the most superficial of observed facts—has served as the groundwork for the study of mental diseases. Each of these terms by common acceptance represents at present a more or less definite external disease-picture, each one differing conspicuously from the others; and yet if one follows these names through the classifications from early to late, one finds that not only to each one have the most divergent meanings been attached by different men or at different times, but that cases described by one observer as mania have been classified by another as melancholia and *vice-versa*. If one could collect together all the cases that were ever described under mania or melancholia,—and such an assemblage would embrace practically the entire psychiatric gamut,—and should then attempt to separate them into two distinct groups under their respective labels, the attempt would be found to be utterly futile, as the two groups would encroach upon each other at every step.

This confusion of meanings and names is conceivable when it is remembered that all the ancient names and terms used to designate forms of alienation, meant at bottom, one and the same thing, namely "madness," thus:

Μανία = *madness.*

Μελαγχολία (etymologically, atrabilious insanity) = *madness.*

Dementia = (literally) *madness.*

Παράνοια = *madness.*

It might indeed well be possible to find one and the same condition described by different observers or at different times under all of the above heads.

To HIPPOCRATES is generally attributed the distinction between *Mania*, the insanity of fury and violence, and *Melancholia*, the insanity of sadness and fear.

ARETAEUS took quite a different view-point and introduced the distinction between *general insanity* (mania) and *partial insanity*

with fixed ideas (melancholia),—a distinction which has survived until far into the past century, and is even noticeable among present-day writers. Melancholia might thus be conceived from two more or less opposing standpoints. On the one hand it was a morbid state with affect depression,—a psychosis defined *qualitatively;* on the other hand it was a morbid state of a certain degree, involving certain of the mental faculties and leaving others intact,—a psychosis defined *quantitatively.*

From this double standpoint, confusion was bound to arise. SAUVAGES adopted the distinction between partial and general insanity, but retained also the older view of melancholia as the psychosis of sadness, and of mania as the psychosis of fury.

CHIARURGI defined melancholia as partial madness, and mania as general madness without specific reference to the affect state. In his classification were to be found therefore, gay and exalted as well as depressed forms of melancholia, the one criterion of the malady being the presence of fixed ideas.

ESQUIROL attempted to bring order out of chaos by subdividing the original melancholia and making two new groups, to each of which he gave a new name. Thus under *Lypemania* he included the cases of partial insanity with affect depression, while the remainder of the group was denominated *Monomania,* the insanity of fixed ideas.

With FALRET, finally, the Lypemania of ESQUIROL became *Melancholie triste,* and Monomania became *Melancholie gaie,* the word melancholia again losing all specificity of meaning as regarded the affect-tone.

Another instance of the frailty of names is seen in tracing the fortunes of the *Confusion Mentale* of current French authors. This disease-picture, which is the natural successor of the *Démence aiguë* of ESQUIROL and the *Stupidité* of GEORGET, has very wide and very uncertain nosologic relations. Under *Stupidité,* GEORGET had described cases which belonged to PINEL'S acquired and recoverable *Idiotisme.* BAILLARGER also gave a clinical picture of *Stupidité,* which he however separated entirely from the acquired idiocy of PINEL and the acute dementia of ESQUIROL and placed under Lypemania or *Melancholie triste* as a sub-group, representing the extreme stage of the psychosis. Here it enters into close relations with the *Melancholia attonita* or Melancholia *cum Stupore* of other authors.

It will be seen that *Confusion Mentale* in its widest definition may comprise a good number of conditions described under a variety of names. CHASLIN in his monograph on the disease,[1] mentions over forty more or less synonymous terms, and the blood relations of the disease extend even outside of these. On the one hand we find the condition described as an independent disease representing a type of insanity,—on the other, as a symptom pure and simple which may complicate various psychoses. It has been described as a form of idiocy, as a form of dementia, as a form of melancholia, as a form of mania, and as a form of paranoia. In some of its phases it enters into relations with the so-called *Circular Stupor* of KRAEPELIN, in others with the *Amentia* of MEYNERT and the *Katatonia* of KAHLBAUM, with *Delirium acutum,* with the various febrile or intoxication deliria, with the syndrome of KORSAKOW.

All these observations, which might be extended indefinitely, merely go to show that names often stand for little in indicating the nature of a morbid condition, its place in the nosographic scheme, its relations and its prognosis. Not only has one name often done service for conditions totally unrelated, but conditions identical or similar have been separated widely in classification schemes under independent and distinct names. This has always been, in the nature of the case, unavoidable, considering the fluid state of psychiatric knowledge, and this very fact suggests the danger of adhering to a fixed scheme of mental diseases in which names are allowed consciously or unconsciously to take the place of accurate descriptions of the pathologic states.

Another danger of new names and new descriptions, inherent not necessarily in the names and descriptions themselves, but rather due to a lack of critical judgment on the part of many who make haste to enter *le mouvement* and adopt the new names and classifications, has been referred to recently in another place[2] in connection with the discussion of the rise of Dementia präcox.

Undoubtedly the safest standpoint yet adopted by an alienist is that of WERNICKE, who refused to attempt to describe a series of individual mental diseases, and gave in their places master

[1] La Confusion Mentale Primitive. Paris, 1895.

[2] "Dementia präcox in France, etc." American Jour. of Insan., Oct. 1905.

psychologic-symptomatologic analyses of various abnormal psychic states, leaving the question of the strict delimitation and classification of disease-entities for a later and more complete psychiatry than the present to decide.

If summary descriptions of disease states, based upon as deep a penetration as possible into the actual nature of the morbid process, could supplant the usual names of current terminology altogether, psychiatry would everywhere rise to a very different plane from that which it still too commonly occupies.

The fact that in many instances scarcely two men attach exactly the same significance to a term, should warn against the careless use of diagnostic names.

Someone, for example, asks the hospital physician regarding the outlook for a certain patient, and the physician perhaps replies that the patient is demented and his condition therefore hopeless. "Indeed," replies the questioner, "Dr. K. also stated that the patient was suffering from dementia, but expressed the belief that recovery might take place." This confusion arises from the fact that the idea of an acute recoverable dementia has not yet completely died out, and the term having in itself no specific meaning, has thus been misapplied to two conditions externally somewhat similar, but of fundamentally different nature and widely divergent prognosis.

Again, to say without qualifying the statement, that a patient has paranoia, is to convey absolutely no information as to the real character of the patient's affliction or of his outlook. In a recent actual case a prominent specialist in nervous and mental diseases made a diagnosis of paranoia and gave a favorable prognosis. A second alienist with an essentially different conception of the disease, declared that "paranoia with good prognosis" is a contradiction of terms. Here again is a confusion due to the use of the same term by different authors to cover widely different conditions.

ZIEHEN describes ten kinds of Paranoia,—

(1) Acute hallucinatory Paranoia (Amentia).
(2) Peracute hallucinatory Paranoia (Delirium tremens).
(3) Chronic hallucinatory Paranoia.
(4) Acute simple Paranoia.
(5) Chronic simple Paranoia.

(6) Secondary hallucinatory Paranoia.
(7) Postneurasthenic hypochondriacal Paranoia.
(8) Postmelancholiac hypochondriacal Paranoia.
(9) Periodic Paranoia.
(10) Circular Paranoia.

together with various sub-varieties. Under Chronic hallucinatory Paranoia, for example, he mentions

(a) Chronic epileptic Paranoia.
(b) Chronic hysterical hallucinatory Paranoia.
(c) Alcoholic chronic hallucinatory Paranoia.
(d) Chronic katatonic hallucinatory Paranoia.
(e) Chronic hypochondriacal hallucinatory Paranoia.
(f) Chronic confabulatory hallucinatory Paranoia.

In this assemblage are to be found conditions the most diverse from all points of view,—etiology, course of the disease, termination, morbid anatomy.

KRAEPELIN, on the contrary, considers Paranoia as a single circumscribed disease of uniform nature, course and event.

Which of these views is the safer and saner, is self-evident.

The object then in recording a patient's history should not be to describe a cut-and-dried disease-picture made up of such and such stereotyped symptoms, to which a definite and final name can be assigned, but rather to furnish as complete a psychic biography of the individual as possible, setting forth the manner and degree in which the diseased psyche departs from the normal for the individual.

This suggests the two prime aspects of the history which should be attended to with equal impartiality and minuteness:

(1) The patient's past, including his family tree.
(2) The patient's present.

III.

No one questions that a complete account of the patient's past is of the first importance in estimating his present, and it was a pat observation of the first American alienist[1] that "the ravings of mad people, for the most part, accord with their habitual tempers and dispositions." Obviously the previous history is of

[1] RUSH, Diseases of the Mind, 1812.

far greater moment in mental cases than it usually is with patients with the so-called medical or surgical diseases, and yet how often is this part of the record dismissed with a few totally inadequate generalisations! The first question that should present itself in dealing with an insane patient is, "What manner of man is he?" What was the norm of the individual during health? What was he as a social, as a business, as a domestic element? What were his aims and ambitions, his dreams and hobbies? What was his manner of work and play? What in his view was the chief end of man? What were his code of ethics, his laws of conduct, his religion, his superstitions, his hopes and fears, his loves and hates? To answer these questions and thereby get an approximate conception of the individual psyche during health, it is necessary that the alienist have at command all the facts that are usually laid before lawyer, doctor, and priest,—particularly the latter.

To get these facts the only satisfactory method is the personal interview, not with one but with several of the patient's relatives and friends, *separately*. In inquiring into the question of heredity, one cannot go too scrupulously into details. So far as possible the family tree should be reconstructed and psychopathic matter sought in each member in turn. General questions and general answers are worthless. If one asks, "Is there any insanity in the family?" too often a monosyllabic negative is the prompt reply, and to regard the matter as thereby settled would in nine cases out of ten be wrong.

There are at least two conspicuous reasons for this. In the first place, any one who has tried to do his duty in anamnesis writing knows how strong is the tendency on the part of relatives, unconsciously, or indeed consciously and intentionally to depreciate or attempt to explain away pathologic elements in the family history, if not to suppress them bodily. This is a source of error which the most patient insistance is required to eliminate. It is common enough after the most pains-taking history has been written in which each of the patient's relatives is asked about in order, to learn subsequently through the casual remark of some friend or relative other than the one who furnished the original history, of distinct psychopathic traits or actual attacks of alienation in the family, which had been quite unsuspected, not having been reported, or perhaps having been expressly denied.

The second point concerns the universal misconception among the laity of what is meant by insanity. For the average layman, only a *maniacus furiosus* is insane. An individual may have had "fits of blues," may have been "downhearted for a few months," he may have been "a bit suspicious," he may even have suffered with "queer hallucinations." All this the friends may admit in furnishing the patient's previous history or facts concerning any of his relatives; "but" they hasten to add, "he was never out of his mind, he was not insane."

Undoubtedly a large question mark is indicated after most of the negative statements in family histories as usually supplied.

If the facts are being given by one of the patient's relatives, particularly by a member of his immediate family, notes should be made of the general mental status of the informant while the anamnesis is being taken, and these notes should be entered in the family history. Not only is the observer thereby enabled to form some judgment of the trustworthiness of the information which has been given him, but he also has some positive observations which may possibly have a direct bearing upon the question of heredity. Likewise in any subsequent interview with relatives, any psychic abnormalities or peculiarities in these persons should be noted. With these should be included any eccentricities of attire, peculiarities in speech and handwriting, a tendency to unusual attitudes or movements, the presence of tics, as well as any physical stigmata. It should be a rule to enter in the history the name and relationship to the patient of the person who furnishes the information. In the family tree, names should be recorded as far as possible. The character of the given names often furnishes interesting clues as to inherent family traits. In one case in which no family peculiarities were recorded, the patient had nevertheless been damned with the name "Xantippe." In another case recently under observation, in which likewise no mental anomalies were reported in the family history, the patient, a girl, whose birth had occurred on the fourth of July, had been launched into life labelled "Independence Day Smith!"

In all psychiatric records, the one requisite upon which too much emphasis cannot be laid is *accuracy*. There is only one man who is in a position to judge between truth and fiction in a patient's history. He is the man who obtains the information

and records it, and he should be on his utmost guard to avoid putting down anything of which he is not reasonably sure. Insistance upon this point would seem superfluous, and yet the danger of serious error from its neglect is brought strongly home in finding how often different members of a patient's family furnish accounts which are widely divergent, even directly contradictory.

A word may here be said about printed forms containing lists of stereotyped questions, such as are sometimes used in taking histories. There is only one occasion in which such a document has any excuse for its existence, and that is when a personal interview is absolutely impossible, and the history must be obtained through correspondence. Experience has shown, however, that the correspondence method is about as satisfactory as acquiring a college education by mail. It should never be allowed to take the place of a personal questioning and cross-questioning. A list of questions cannot be printed which will fit all cases, or which will indeed fit any one given unknown case. Moreover in the presence of a set of specific questions, the informant, who is often anxious to make his replies as brief as possible, omits features of importance not directly suggested by the printed questions, which might have been brought out in a face-to-face interview. Here again the danger of misinterpretation, of the failure to understand what is wanted, and of furnishing inaccurate or spurious information even with the best intention, is a heavy argument against putting trust in printed forms. Answers to questions as to the presence or absence of hallucinations, for example, are often quite unreliable. Even the family physician sometimes testifies in the committment papers to the presence of hallucinations in cases where the most careful inquiry fails to bring forth any evidence that hallucinations are or ever were present. It is doubtless true that the occurrence of true hallucinations is less frequent than is commonly believed in many forms of mental disease.

IV.

It is essential that the patient's history should be recorded in narrative form. It should read, not like an application for life insurance, with isolated disconnected facts, but as a continuous

story with its several chapters corresponding with the epochs and crises in life,—a real psychiatric tragedy, comedy, or romance as the case may be.

Beginning ten lunar months *ante natum*, the record should deal with the circumstances of gestation and birth; the first year's nutrition and development; the period of childhood with its accidents; the school age, its characteristics and duration; the details of the puberal epoch, particularly in girls, and of the menstrual history; the period of youth, its ambitions, accomplishments, tendencies, excesses; the marital stage, the conjugal and parental disposition; the climacteric epoch in both sexes, its nature and duration.

All this can be put down accurately and completely without making the record too bulky. All important events should have their exact dates, and it should be possible at any time to learn from the history, what and where the patient was at any given period of his life.

For the recording of these events the use of a stereotyped printed form is pernicious. To write an intelligent psychiatric history, one must first have clearly in mind what the contents of an ideal history are; he must also have in mind in order the general and specific questions which must be asked in order to develop such a history; he must in the third place be able to vary and supplement these questions to fit not only the individual patient, but what is quite as neccessary, to fit the individual informant.

If one has not this general scheme in mind and at command, and must trust to the suggestions of a list of printed questions to be applied indiscriminately to all cases, his histories will be artificial and forced, will lack individuality, will fail to distinguish in each case clearly between essential and secondary facts, will be monotonous, non-sequent, disoriented, and will rarely furnish a convincing demonstration of the real nature of the case in hand. Such histories are better unwritten.

The danger of drawing erroneous conclusions from insufficient premises is considerable when dealing with the general character and disposition of the individual. Summary characterisations which relatives, particularly mothers and wives of patients furnish, are often pretty wide of the mark, and one cannot be too careful to avoid recording as facts what may be only prejudiced

opinion, or injudicial estimation of accidental or transitory conditions.

V.

Having made up accurately, consecutively and with sufficient completeness the patient's life history, the comparison remains to be drawn between his past and present,—to describe the series of alterations which the diseased psyche presents. This comparison should be calculated to answer the following questions:

(1) Are the symptoms which characterise the psychosis simply quantitative modifications of normal elements in the individual personality?

(2) Are they recrudescences of early or latent individual characteristics, or of atavistic traits?

(3) Are they, finally, utterly new and foreign phenomena, unrelated both to the patient's inherited and to his individual past?

Careful attention to these points, it is needless to say, may carry with it prognostic indications of no small value.

The first chapter in the story of the present illness, deals naturally with the *onset*, the subject in all the history of the disease, the most important, and yet often the most neglected.

The *date of onset* is always particularly difficult to establish. This is because of the fact that prodromal symptoms, especially if, as is so often the case, they be predominatingly physical, are not associated by the patient's friends with the developing psychosis. Even early psychic manifestations which the alienist recognises at once as belonging to the disease-picture are commonly passed over in silence, and the malady is assumed to have begun only with the appearance of acute or exaggerated symptoms which may have brought the patient into conflict with the laws of the land, the unwritten statutes of social intercourse, or the necessary regulations of domestic life.

The date of onset as usually furnished is therefore in practically every case wrong, and represents not the actual beginning of the disease, but the time when the patient became so insane that a layman could make the diagnosis.

Early physical symptoms should receive the most careful attention, and in inquiring into these there are certain specific questions which should never be omitted. These relate to:

(1) The general state of *nutrition* during health, as compared with recent and present conditions. What was the patient's best normal *weight*, with date? Has there been loss or gain in weight in connection with the present illness, and if so, what is the duration of the change? Has loss in weight been associated with loss in strength? Has loss or gain in weight been associated with changes in appetite and the amount of food ingested? Have weight changes been associated with differences in the amount of energy expended in mental or physical activity, or differences in the amount of sleep obtained?

(2) Was *headache* a prominent early symptom? Its character, duration, and possible association with other symptoms, particularly loss of sleep or gastro-intestinal disturbances? The occurrence or absence of severe headache is not infrequently an important differential-diagnostic index.

(3) Condition of the *bowels*. Here as a rule the question should not be,—Has the patient been constipated?—but rather,—How long has he been constipated? What has been the average interval between movements? Has the condition grown worse of late? What was the longest interval? By making these specific inquiries a state of affairs is often disclosed which would never be suspected if one were satisfied with the simple affirmative answer to the general question,—Has constipation been present?

(4) What have been the conditions of *sleep* as compared with the patient's normal habits? Average number of hours in health? Recent changes in the amount and depth of sleep, with dates? Variations in the tendency to dream? Content of dreams? Relation of dreams to expressed thoughts or acts of the patient which constitute symptoms of his alienation?

(5) The *menstrual function* in female patients, occurrence of irregularities, their character and dates? Recent state of menstruation and date of last period? Association of exaggerated mental symptoms with menstrual periods? Relation between intensity of mental manifestations and irregularity of the menstrual function? Occurrence of psychic phenomena replacing omitted periods? These questions should be asked in detail so as to afford an approximate idea of the character of the menstrual curve, continued directly from health into the developing psychosis. This item alone, distinguishing between *omission* of

periods and marked *irregularity* in interval and amount, often furnishes valuable indications as to the nature of the psychosis.

If it is difficult to obtain a clear history of the prodromal physical symptoms, it is even more difficult to get a trustworthy account of the early psychic manifestations. The spontaneous information which the patient's friends may give will rarely contain the actual initial mental symptoms, and these must be sought with particular patience and persistence. One should conduct the inquiry with the same object in view and with the same care as when making a personal mental examination of the patient, the object being to reconstruct the initial disease-picture so that with it may be compared in a maximum number of points the present tableau. That our histories so seldom meet this requirement is not altogether, or perhaps indeed chiefly, the fault of the man who writes them. Often the persons who supply the information paid little attention to the earliest symptoms, attached no importance to them, or failed to recognise them altogether. Moreover having made no mental or other memoranda, they recollect imperfectly, distort and misplace events, and furnish a fragmentary and uncertain record. These difficulties are hardly, sometimes impossibly, to be overcome. Their existence, however, calls for the more conscientious effort on the part of the history writer.

Above all things hackneyed expressions should be avoided. They are not only for the most part useless, but often misleading. Careful descriptions should take their place. In a dozen histories where this rule has been neglected, it may be absolutely impossible to obtain from the record of the onset any hint which would serve to differentiate one psychosis from another. How much differential information does it convey to say that the patient was "excitable," "nervous," "talkative," "restless," "irritable," "obstinate," etc., etc.? All these symptoms may be present in mania, in melancholia, in paresis, in hysteria, in dementia prācox, in alcoholism and in Heaven knows how many other conditions. Their mere recital may seem adequate to the lay informant; they do not however, constitute a psychiatric record.

I am aware that all this would seem like a waste of words in demonstrating the obvious. It is nevertheless too true that the obvious is often that which most needs demonstration.

VI.

The onset of the psychosis having been disposed of, its *course* is next to be recounted, separating it into *stages,* if these have clearly existed (being careful not to suggest them), and describing each in turn with its date, duration, and complex of symptoms. The description, just as the previous life-history, should not be a bare recital of disconnected events, but should take the narative form, in which incidents succeed each other in natural order without hiatus, particular attention being given to the laws of association, sequence, and of cause and effect. Often enough one reads in histories of acts or verbal expressions of patients which are utterly unintelligible, and which are simply set down as "insane ideas." Insane they may be, and yet their genesis, had the inquiry been carried further, might not infrequently be traced to the page of a romance, a dream experience, a conversation overheard, an incident witnessed, some actual occurrence which to the casual observer might seem too trifling to deserve notice.

The *order of succession* of symptoms, their appearance and disappearance, will in many cases become hopelessly tangled unless special attention is devoted to keeping it straight. If one follows the hasty narration of the informant, one will often have the events of yesterday violently juxtaposed to those of months or years ago.

Further in the recounting of morbid states, it cannot be too much insisted that abbreviated diagnostic and snap-terms should be avoided unless immediately accompanied by adequate descriptions of the conditions they are intended to cover. The psychiatric terminology in common use is still too vague, its names are too often misinterpreted, to make it safe to waive this rule. Given, e.g., two histories by different men, in each of which the patient is said to have shown "Negativism", unless we are acquainted with the clinical training and acumen of the two observers, we have no assurance that the symptom to which they have given a single name was identical in the two patients. No safe comparison could therefore be drawn between the two cases, whereas, had each observer fully described the condition to which he referred, they would have become directly comparable and it could have been

easily established whether or not the so-called negativism was similar in both. It is only by this method that careful analysis and differentiation are possible.

VII.

We come now to the personal interview with the patient, the examination and recording of his present condition. Here, more than in any other part of the psychiatric record does the individuality of the observer find expression,—and this is right. It should not be attempted to make all conform to a cut-and-dried scheme of examination. Certain fundamental principles must of course be recognised, but beyond these, every careful clinician will consciously or unconsciously evolve his own method of approaching and examining a patient, and by it he is likely to get more out of the case than if he adopted ready-made the method of some one else.

In making an examination there are three prime requisites—

(1) To observe minutely.
(2) To interpret correctly.
(3) To record accurately.

This implies that the record must not only serve to recall vividly to the observer at any subsequent time the disease-picture which the patient presented when the examination was made, but it must also be to such an extent appreciable to any third person, that the latter can, without having seen the patient, form an approximate idea of the condition described.

If these terms are met, the particular method of attack and order of examination are matters of secondary importance, provided some rational guiding principle is followed. The chief matter is to get the facts, to record together things which belong together, and to group findings under their appropriate heads, which should be writ large.

The plan of examination which follows is one of a number which may be adopted, all of which serve their purpose. It possesses the advantages of being brief, simple, rational, comprehensive, self-suggestive, not taxing the memory.

Psychophysical Schema.

I. Stereotyped Interrogatory.

II. Individual Peculiarities of Appearance and Expression. Stigmata. Anthropometric Data.

III. Psychologic Analysis.

A. Centripetal Tracts. Psychosensory Sphere. (*Primary Sensation.*)

an-
hyp-
par-
hyper- } æsthesia.

(1). The special senses.
(2). Cutaneous and Muscle sensibility.
(3). Cœnæsthesia.

B. Central Tracts. Intrapsychic Sphere.

a-
hypo-
para-
hyper- } psychosis.*

(1). Attention.
(2). Orientation. Adjustment of the Microcosm to the Macrocosm.
(Interpretation of Primary Sensation,—*Secondary Sensation.*)
(a) Autopsyche.
(b) Allopsyche.
(c) Somatopsyche.
(3). Memory. Recording Faculty, Recollection.
(Retaining of Primary and Secondary Sensations,—*Tertiary Sensation.*)
(4). Condition of Consciousness. Associative Processes. Imagery. Insane Ideas.
(*Chaining together of Primary, Secondary and Tertiary Sensations.*)

*In the schema, "psychosis" is used in its original psychologic meaning, to denote any psychic process.

(5). Critique. Judgment. Power of Conclusion. Abstract Reason.

(6). Psychic Mode. Affect-tone (qualitative and quantitative). Ethic. Instincts, social and religious, sexual, conjugal and parental.

(7). Autognosis and Autoprognosis. Insight,—adequate, partial, absent, perverted, exaggerated.

C. CENTRIFUGAL TRACTS. Psychomotor Sphere. Volition. (*Reaction to Primary, Secondary and Tertiary Sensations.*)

a-
hypo-
para-
hyper- } kinesis.

(1) General muscular strength and tone. Maintained effort.
(2) Gait and Station.
(3) Coordination.
(4) Tremor.
(5) Paresis and Paralysis.
(6) Tics.
(7) Speech. Handwriting.
(8) Reflexes.
 (a) Tendon.
 (b) Cutaneous and Mucous Membrane.
 (c) Pupillary.
 (d) Organic.
 (e) Dermatographic.

IV. SOMATIC CONDITION. Nutrition. Sleep.
(1) Respiratory.
(2) Circulatory.
(3) Digestive.
(4) Uro-genital.
(5) Trophic and Vaso-motor.

In a scheme of examination such as the foregoing, all the phenomena both physical and mental are comprehended in an organic

whole, which aims to be, not a dissociated array of symptoms, but rather an orderly picture of a diseased personality, the various expressions of which stand in their natural relations to each other. The neurologic manifestations are not described as something apart, independent of the psychic symptoms proper, but are dealt with in their appropriate places represented by the centripetal and centrifugal tracts, while the specific mental phenomena occupy their natural intermediate position represented by the central tracts.

The elements of this scheme are for the most part self-explanatory and but few words of comment are indicated.

I. *The initial interrogatory* should not be too long, may embrace a dozen or two questions, and should be fairly stereotyped. It serves at least three purposes: (1). It establishes the best possible *rapport* between the patient and the observer. (2). It serves as a valuable index to the trend the subsequent more detailed mental examination must take. (3). By being stereotyped, identical or similar questions being asked in each case examined, it affords at once an idea of the comparative reaction of patients in the various pathologic states.

The nature and number of the questions to be asked in the initial interrogatory is a matter of individual taste. They should, however, be such as will demonstrate the condition of the patient's memory regarding the essential events of his life, his more recent experiences and the facts of his illness ; his view of his relations to others and to his surroundings ; his idea of time and place ; his belief as to his own physical and mental condition. Repeating a question after an interval, under a different form, often helps to bring out a memory defect.

The following stereotyped interrogatory has been found useful.

(1) Full name?
(2) Age?
(3) Occupation?
(4) Birthplace?
(5) Birth year and day?
(6) Married? How long? What year?
(7) Children? Number? Age of eldest? Age of youngest?
(8) Residence? Address?

(9) How long have you been here? (in the clinic).
(10) Date of to-day?
(11) On what date did you come?
(12) What is this place? Its location?
(13) Do you know any of the persons here present? Which ones?
(14) Who came with you here?
(15) Reason for your coming?
(16) Have you been ill? How long? In what way?
(17) How is your present physical health?
(18) Do you complain of any mental trouble?
(19) Cause of your illness?
(20) What are your hopes or plans for the future?

II. *Individual peculiarities.*—Under this head may be summed up briefly the patient's striking characteristics both pathologic and normal. Such a summary affording a bird's-eye view of his personality, serves subsequently as a ready remembrancer of the case. It is especially important that it be supplemented by profile and full-face photographs. Here may be properly entered a description of any physical stigmata present, likewise the anthropometric data, which should include at least—

(1) Height (centimeters).
(2) Stretch of arms.
(3) Weight.
(4) Head circumference, Tracing.
(5) Cephalic Index.
(6) Hand grasp, right and left (dynamometer).

III.—*The psychologic analysis* aims to furnish a synthetic view of the diseased personality by examining first the condition of periphery sensibility and the afferent paths; second, the state of central intrepretation, elaboration and association; and finally the character of the psycho-motor reaction.

Adopting the nomenclature of WERNICKE, there may be four variations from the norm on any of the three sides of the arc, —afferent, central, efferent. Thus in the first or psycho-sensory sphere, there may be anæsthesia, hypæsthesia, paræsthesia, or hyperæsthesia ; in the central or intrapsychic sphere,—afunction, hypofunction, parafunction, hyperfunction; in the motor sphere,—

akinesis, hypokinesis, parakinesis, hyperkinesis. All possible neuropsychic symptoms may be described in terms of these twelve variants.

In the detailed consideration of the state of the special senses, of cutaneous and muscle sensibility, and cœnæsthesia, the presence or absence of fallacious sense perceptions must be determined. Often the utmost care is necessary in proving the evidence, before one can safely say in a given case whether hallucinations exist. The distinction between hallucinations and illusions is serviceable when it can be drawn, and in each instance the exact nature of the sense-deceptions should be described. It must be determined which senses are involved, and the order of their involvement ; the time of day when the fallacious sensations occur; their relation to sleep and waking; their association with definite changes in the state of consciousness, particularly orientation.

In seeking the origin of hallucinations, the question of drugs must be considered. One must also remember the possibility of after-images. Particularly important to recognise are the optic, and sometimes auditory sense-deceptions of the transition stage between waking and sleeping (hypnagogic hallucinations) such as may occur in normal individuals, and are characteristic of conditions of fatigue or exhaustion.

The intimate relation between dream-content and waking thought-processes in pathologic states of mind is well known. Thus certain patients often appear unable to distinguish between dream and waking experiences, and what may at one time be recorded as true hallucinations, turn out later to have been nothing more than a dream recollection carried over unconsciously by the patient into his waking state. The association of sleeping and waking dream hallucinosis is revealed exquisitely in conditions of clouding of consciousness, described by RÉGIS as *délire onirique*.

Finally, in describing the characteristics of hallucinations it is necessary to separate those of peripheral sensory distinctness, occurring fortuitously without subjective relation to the content or consciousness (" visions," " voice of God," etc.), from those of more obscure content or paler coloring of central origin, as, for example, when an oft-recurring thought-process is finally given a vague auditory projection by the patient.

The importance of the state of cœnæsthesia in influencing the mental, more specifically the affect tone, has recently been emphasised by COWLES.[4]

These are a few of the points which must be borne in mind in settling the place of sensory anomalies in any given morbid condition.

Having dealt in detail with the various forms of special and general sensibility and having determined or excluded any lesions of the peripheral tracts, we next turn to the special province of intrapsychic activity. Under the seven sub-heads in the schema are comprehended in a somewhat arbitrary manner, the essential psychic processes and states into which our inquiry must be carried. That this schema is very imperfect will be self-evident. It offers however, a suggestive arrangement of the several elements and attempts to indicate the value of interpreting higher processes, wherever possible, in terms of lower and simpler ones.

The general qualities of *attention* will have been sufficiently demonstrated by the initial interrogatory. Its essential modifications are in,—

(a) Spontaneity.
(b) Intensity.
(c) Dirigibility.
(d) Stability.

The character of the attention is dependent in the first place upon the condition of the afferent paths; and upon the quality of the attention are in large part dependent in turn the states of *orientation*, and especially *memory*, as a simple test of the recording faculty (Merkfähigkeit) in a preoccupied individual will show.

The manner of the patient's adjustment to his surroundings is considered, following WERNICKE, in terms of the three spheres of consciousness—the *Autopsyche*, or conscious representation of the Ego; the *Allopsyche*, or conscious representation of the external world in its temporal and spacial relations; the *Somatopsyche*, or conscious representation of the anatomic and physiologic nature of the individual.

[4] Psychiatry in the Functional Psychoses, AMERICAN JOURNAL OF INSANITY, Oct., 1905.

The state of *consciousness* or associative memory depends upon the condition of the elements which precede it in the schema. It represents the sum of the processes of association in their two chief modifications, qualitative and quantitative.

The character of the individual associations must be taken into account, with regard to (a) sex, (b) time of life, (c) social position, (d) individual intellectual status. In general the manner of the grouping of ideas may be determined by observing—

(1) The rapidity of the succession of ideas,
(2) The facility of the flow of ideas,
(3) The uniformity of the flow of ideas,
(4) The presence or absence of recognisable connecting links (direct and indirect associations),
(5) The completeness and permanence of the separate ideational images,
(6) The influence of the surroundings upon the ideational flow (suggestibility),
(7) The presence of pathologic associations,—an excess of outer associations (those determined by mere external relations) over inner associations (those deductively determined), particularly, a predominance of sound associations.

Finally the examination must include the *faculty of critique,* the highest human psychic function, the complete loss of which constitutes the most trustworthy criterion of dementia. It is the degree of development of this faculty more than any other factor which determines the position of the individual in the mental hierarchy. Representing as it does the highest and latest acquired mental function, it is the most constant to suffer in any form of insanity, and the nature and severity of the lesions of judgment, of the ability to draw just conclusions from given premises, are in all cases especially important to determine.

Having taken into consideration the various so-called intellective faculties, which together may be said to constitute the *form* of consciousness, there remains to be studied the individual *feeling-tone,* the emotional reaction with its pathologic variations, representing the *color* of consciousness. In this field

the personal equation is especially important, and individual differences in control, whether predominatingly by the heart or the head, must be carefully weighed.

> "Chaque homme a son destin
> Les uns ont une idée, les autres un désir."

The affect-tone is simply the mode of the conscious ego in the presence of its environment, and for our present purpose may be said to be determined primarily by the degree of warmth with which the ego voluntarily or involuntarily sets itself in relation with the objects of consciousness. If this *relational warmth* be temperate, the ego may be said to be independent, to possess a healthy self-sufficiency; if it be greatly diminished, a more or less complete isolation of the ego may result, favoring the development of various delusional fabrics; if, on the contrary, the relational warmth be greatly increased, the ego is subjugated by an emotional instability which may manifest itself in an affect psychosis. In this connection must be studied the so-called instinctive tendencies, normal and pathologic, of the individual, his independence of, or dependence upon, external influences,—the love of wife and children, the "support" of religion, the reinforcement of social intercourse. Both the manner and the degree of an abnormal warmth or frigidity in these relations, must be sought. This will include as well the general attitude of the individual to his surroundings from the view-point of the usual conventions and proprieties.

The survey of the psychic manifestations may be properly closed and summed up in the *Autognosis*, which should contain the exact statement of the patient's idea of his condition,—mental, spiritual, physical,—the causes and outlook. The degree of insight which a patient possessses is always an important factor and any changes in his point of view from time to time should be recorded. It is to be borne in mind that the patient's idea of insanity is naturally that of a layman, and that consequently his declaration that he is not insane is no more evidence of a lack of insight than it is that his mind is sound. It is common enough for a patient to say, "I'm not insane, my mind is clear, I have my memory. Ask me any question and I will answer you rationally, propose me a sum and I will do it correctly. I am not insane."

> "It is not madness
> That I have uttered; bring me to the test,
> And I the matter will re-word; which madness
> Would gambol from."

And this is simply an expression of the prevailing belief in the community, and unfortunately with many physicians, that a person who does not rave, who knows where he is and can reply naturally and correctly to questions, cannot be really insane. While, therefore, the declaration of the patient that he is sane may not be in itself a morbid sign, he may be at the same time very definitely alienated.

The final question in the psychologic analysis,—that of the condition of the *psychomotor functions,* is in reality the most important of all, inasmuch as movements are the channels through which the psyche asserts itself. What the individual perceives and recognises, what he deliberates and concludes, what he feels and wishes,—these facts of consciousness we can judge only by their peripheral motor expression.

Psychiatry may be defined as the *pathology of reactive movement.* WERNICKE subdivides movements, for clinical purposes, into three classes,—(a) *expressive,* accompanying changes in the feeling-tone; (b) *reactive,* following directly upon external stimulation; (c) *initiative,* resulting from the so-called spontaneous thought-processes. All movements are however fundamentally reactive, and this subdivision is a purely arbitrary one, and indeed not always possible. It is nevertheless of distinct value clinically to separate movements which represent directly the patient's reaction to his surroundings from those which constitute the external expression of processes arising intrapsychically,—in other words to distinguish between the reactive movements to *present* external impressions and reactive movements to *past* impressions by way of associative memory.

In investigating the psychomotor reaction several points are important to consider: First, the general character of all the patient's movements, their rapidity, completeness and accuracy of execution, the amount of associated effort and energy consumed, their purpose and result. Second, the predominating element in the genesis and control of the patient's motor expression, whether external or internal, whether reflex or conscious, whether intel-

lective or emotive. Finally, to state the matter simply in another way, the relation or absence of relation between the peripheral motor phenomena and the content of consciousness, or the feeling-tone. To be noted are changes in facial expression as indicative of emotional states, the presence of laughing and crying or other primarily expressive motor phenomena, the patient's general bearing, his carriage, attitude and gait, his execution of suggested movements, his spontaneous gestures, and movements of defense, attack, or prehension with their morbid variations.

The psychomotor sphere resolves itself finally into two main elements,—the psychologic and the neurologic. The latter has to do with the state of peripheral innervation and the motor end-apparatus, the chief aspects of which are enumerated in the schema. The psychologic element on the other hand, deals with the *will* in the broadest sense,—the questions of the psychic initiative, the capacity for mental application, and the creative impulse.

VIII.

The object of a clinical history as herein outlined is not primarily to furnish a picture of a disease, but rather of a diseased personality, showing in what way the functions of normal mental life are disturbed in the morbid process, and deriving so far as possible pathologic from healthy phenomena.

Having completed an impartial summing up of the case, we should not summarily assign it to one of the groups of some fixed classification, but rather *compare* the resultant tableau, point by point, with similar disease-conditions of our own observation, and particularly with those described by the authors of classifications. If then the picture fits, without forcing, a pattern already laid, well and good. We can attach the label with satisfaction. If however, it does not fit, we do not necessarily feel that we know less about the case, simply because we have not a diagnostic name ready to apply. By being willing to keep our histories reasonably open,—not overhastily closing them with the seal of a decisive diagnosis which might possibly serve as a closed door against subsequent critical observation, it may sometimes be possible to carry our nosologic differentiation a step further, in discovering new forms of morbid mental manifestation.

IX.

The view-point which this paper aims to emphasise implies not only that the clinical history does not begin with the patient's admission to the hospital, but also that it does not close with his discharge, whether recovered or not. In an ideal reception hospital, or small clinic for acute and initial cases, the movement should be fairly rapid. This means that only a very small segment of the patient's life, perhaps only a relatively small part of the course of his disease, becomes matter of direct observation in the clinic. It is of the greatest importance therefore that the clinic keep in close touch with all its discharged patients, following them either in their private life or in their later experiences in other hospitals. Cases of assumed recovery should be carefully scrutinised from time to time to discover whether the recovery be real and permanent. The question of "recovery with defect" is also one upon which more light needs to be thrown. In the case of recurrence it should be established whether the later attack does or does not represent simply a phase of the original disease. By separating a sufficiently large number of cases, in which a single attack occurs during the patient's lifetime, from those which are characterised by repeated attacks, it may be possible to discover in the accumulated material points of prognostic moment at present unknown. The relations may also be demonstrated between conditions more or less similar occurring at different periods of life, for example, the identity or individuality of the affect psychoses of the involutional period and those of earlier life. The one question of prime importance which confronts the alienist at the onset of every case of insanity is, "What will be the immediate and final outcome of the disease?" and the surest answer to this question is to be found in having at command a stock of completed psychic biographies for comparative study.

X.

In conclusion there is little to add. It has not been the object of this discussion to offer a complete and ideal programme of record-making, but merely to suggest certain points which experience has shown to be important,—and sometimes overlooked. As for the method of clinical observation, that is something which

every man is bound to work out for himself. The cardinal virtues of the psychic biographer are three: tactful patience in grubbing for facts, a skeptic attitude towards historic data as commonly supplied, and an impartial accuracy in recording established facts.

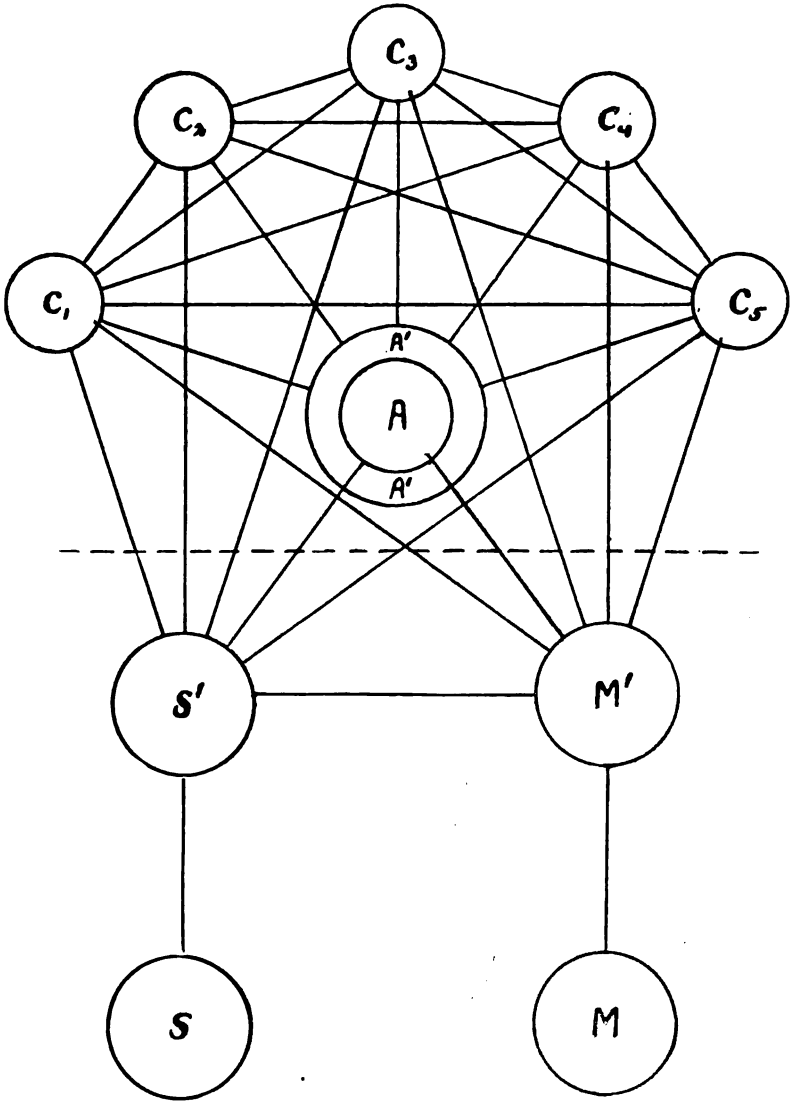
The one essential to every history—it cannot too often be repeated—the one item which is absolutely necessary to a correct appreciation of the various morbid manifestations, is an approximate idea of the *individual psychic groundwork*. We are not dealing alone with an organ composed of epithelial cells and blood-vessels, which in a normal condition is of practically identical nature in all the individuals of the species, and which under pathologic conditions must, by virtue of its anatomic relations, manifest this or that definite and characteristic change both in structure and function. We have to do on the contrary with a series of human minds, the highest product of evolution, and which in spite of the relative uniformity of the discharge of the elementary psychic functions, present nevertheless the greatest possible individual variations. Freedom and equality are characteristic neither of man nor of the mind of man, and we cannot compare two psychoses unless we are first able to compare the two individual minds. The proverb "One man's food another man's poison" may be given a psychiatric turn,—

What in one mind would be a sign of alienation, may be in another mind a normal manifestation.

SCHEMA TO ILLUSTRATE THE PSYCHOLOGIC ANALYSIS.

Centripetal or sensory paths are represented in blue;
Centrifugal or motor paths in red;
Central or intrapsychic paths in black,
The cerebral hemispheres are represented by the polygon S' 5C M'.

S = any peripheral sense organ; *e. g.*, the retina.
SS' = the corresponding sensory tract; *e. g.*, the path between the retina and cuneus.
S' = the seat of *primary sensation* corresponding to the sense organ S; *e. g.*, the cortex of the calcarine fissure.
M' = any cortical center for motor discharge; *e. g.*, one of the several centers of the precentral gyrus, or BROCA'S convolution.
M'M = the corresponding motor (pyramidal) tract.
M = the corresponding peripheral motor organ; *e. g.*, the muscles of articulate speech.



SCHEMA TO ILLUSTRATE THE PSYCHOLOGIC ANALYSIS.

SS'M'M = the sensori-motor reflex arc. This is the pure reflex arc which represents the cord reflexes, likewise the reflexes of animals which do not manifest the phenomena of consciousness, and may finally stand for the first unconscious reflex of the infant.

A = the focus of conscious attention; likewise the seat of identification and interpretation of the primary sense perceptions received at S'. A. may therefore be called the seat of *secondary sensation*, or apperception. A. is also the center through which takes place the reactive process known as a conscious voluntary psychomotor discharge, or act of the will so called.

S'A = the psychosensory tract.

Lesions in SS' or S'A produce respectively peripheral or central

an-
hyp-
par-
hyper- } æesthesia.

AM' = the psychomotor tract,

Lesions in AM' or M'M produce respectively central or peripheral

a-
hypo-
para-
hyper- } kinesis.

SAM = the psychic reflex arc, the arc of normal conscious psychosensori-motor activity as displayed in man and in those animals endowed with associative memory.

The broken line is drawn in to separate the higher and lower nervous phenomena,—the fields respectively of psychism and reflex automatism. Animals possessing only the primary nervous mechanism indicated below the line may be called *protopsychics*, those possessing the upper segment as well, *metaphysics*. Neural processes involving only the lower arc may be spoken of as pure *reflexes*, those involving the upper arc, as *reactions*.

C = the seats of memory pictures; association centers. Images received at S', interpreted and classified at A. may be said to enter into relations with similar images already present in their respective memory centers. C. may therefore be taken to represent the seats of *tertiary sensation*.

A' = Border consciousness, the inner circle representing the threshold. The relations to each other of the two circles A. and A', may be illustrated by comparing the inner circle to the pupil of the eye which dilates and contracts, and the area of the outer circle to the iris. Thus images hovering beyond the threshold may be said to become matter of conscious appreciation by the enlargement of the circle A. to include them.

CC, CA, CA' ACA', etc. = Thought processes. Acts of associative memory. Lesions in these tracts produce

a-
hypo-
para-
hyper- } psychosis.

In normal resting attention, if such a condition may be assumed, the *status mentis* may be said to be represented by the schema as it stands, the focus of consciousness A, being in direct connection with the receiving center S' and the discharging center M'. The centers of latent memory pictures C_{1-n}, on the other hand, while in direct communication with the border consciousness A', as indicated in the diagram, are nevertheless not, in the assumed resting condition, directly connected with the center of conscious attention A.

Given this condition, a normal sensori-psychomotor phenomenon might be described taking place as follows. A primary sense impression is received at S' and transmitted to A. At this point memory pictures between which and the impression occupying A. psychic tropisms may be said to exist, are awakened perhaps at C_2 and C_4. The connections C_2A and C_4A are at once established and we have the complete concept represented by the triangle AC_2C_4A. The entire reactive phenomenon would therefore be indicated thus,—SS'A(AC_2C_4A)M'M. Such a phenomenon may be called a *conscious process.*

The concept (AC_2C_4A) has now become a unit and may be represented henceforth perhaps by C_3.

If now on the next occasion when a sense impression having a psychic affinity for C_3 reaches S', a state of preoccupation be assumed, the psychosensory impulse may be stopped at A' and be at once shunted off without traversing A. at all. The reaction may take place in a similar way and we have the phenomenon SS'A'C_3A'M'M. This would constitute a *subconscious process.*

Assuming in the next place a still greater abstraction of consciousness, we may conceive of psychic events which not only do not pass through the focus of consciousness but which do not even impinge upon the border consciousness, and are therefore perhaps not re-suggestible. Such a phenomenon would be represented by SS'C_3M'M, and might be spoken of as a *paraconscious process.* All the elements of consciousness must be assumed to be variants, and the area of the circle A' may vary within wide limits. The processes described as subconscious and paraconscious may differ from each other, therefore, only in degree.

Finally we have the *unconscious processes* of the vegetative and automatic functions, represented by the lower arc SS'M'M.

It will at once be seen how both the variations in normal mentality and the various pathologic states can be graphically represented by slight alterations in the several centers or connecting lines of the schema. For example, in a normal psychic state the border consciousness A' may be

compared with a filter through which pass to A. only those memory impressions which have a necessary affinity with the image at the time occupying the focus of consciousness, all other memory images being repressed in the subconscious sphere. In the state of the so-called *maniacal flight* on the other hand, the filter-function of A′ may be said to be defective or absent and a great variety of centers stands at once in connection with A. This condition would be represented by extending all the lines C_1A', C_2A', C_3A', etc., until they touch the inner circle, or, what amounts to the same thing, by conceiving the circle A. dilated until it coincides with A′.

Other pathologic variations will readily suggest themselves.

Correspondence

The Editors, American Journal of Insanity:

My attention has been called to a mathematic inaccuracy in my article in the last number of the JOURNAL on dementia præcox. It was stated (p. 267) that the per cent of recoveries from the katatonic and hebephrenic groups, according to Kraepelin, is 21. Kraepelin states (Psychiatrie, 7th edition, pp. 208, 234) that 8 per cent of his hebephrenics and 13 per cent of his katatonics may perhaps be spoken of as cured. Adding these figures together gives 21, which is obviously not the percentage of recoveries of the two groups or of dementia præcox as a whole. In the paranoid group no recoveries are recorded. Consequently the percentage of recoveries of all cases of dementia præcox, according to the above-quoted statistics, would be the average of 8, 13, and 0, (admissions being approximately equal in the three groups), or about 7 per cent.

CLARENCE B. FARRAR.

Obituary

THEODORE DEECKE.

About thirty years ago, when pathology was receiving but scant attention in our hospitals for the insane and the microscope was just beginning to make its impress upon clinical psychiatry, the work of Theodore Deecke attracted wide attention. As special pathologist at the State Lunatic Asylum (now Utica State Hospital), the subject of this sketch was a pioneer in the field, and the pages of this JOURNAL attest the activity of his service. The older men in the specialty, to whom he was best known, will learn with regret, therefore, that he died at his home in Utica, N. Y., on December 15, 1905.

Theodore Deecke was born October 1, 1836, at Lübeck, Germany, where his father was professor of the classical languages and history in the High School. His intellectual inheritance was of the best, and members of the family occupy high places in German life to-day. After a thorough preliminary education in his native town, he took up the study of the physical sciences, comparative anatomy, histology, and physiology at the universities of Halle, Berlin, and Kiel. For three semesters he was an assistant in the Berlin Pathological Museum under Dr. Carl Hartwig Peters, a brother, by the way, of the late astronomer of the Litchfield Observatory, Hamilton College. He was a close student of advanced chemistry, at one time turning his abilities to practical account by engagements with large manufacturing establishments in Hamburg and Bremen. Thereafter he returned to Lübeck to undertake scientific work in connection with the city hospital. In 1867, he came to the United States and settled in New York. His work attracted the attention of the late Dr. John P. Gray, who was always quick to anticipate advances in psychiatry and to avail himself of the energies of progressive spirits in fields that promised good harvests. Thus

it came about that Mr. Deecke was engaged as special pathologist to the State Lunatic Asylum in March 1873. This position he held till May, 1891, when he retired to private life and opened a laboratory in the city of Utica.

Mr. Deecke's genius was best shown in microscopy and in the domain of chemistry. These qualities made his services valuable in the courts as an expert toxicologist. As a pathologist he occupied subordinate rank, to say which is to belittle neither talent nor achievement since his training had not been of a kind thoroughly to equip him for the special service which he set himself, or, more accurately, was set him, to perform. His limitations in this regard arose solely from the circumstances of his education and training. He was not a physician with clinical experience in general medicine or psychiatry, and concerned himself but little with the practical aspects of psychiatry, thus failing at times to interpret clinical phenomena by the data of the laboratory, and unfortunately the necessity of accurate clinical studies, antecedent to pathological investigations was not insisted upon in the problems he was asked to undertake and solve. But as a microscopist he possessed unusual skill. His brain and cord sections (he was himself the inventor of a microtome for this purpose) were excellent, and his micro-photographs, which were also made with an original apparatus, had at one time a great vogue.

He wrote for the medical press many articles embodying the results of original research in many fields. Among his more notable essays were those on the Germ Theory of Disease, "Primäre Verrücktheit," Urea and Phosphoric Acid in the Urine, The Structure of the Vessels of the Nervous Centers in Health and the Changes in Disease, Some Changes of the Ganglion Cells of the Grey Cortex of the Brain in Acute Delirium, and their Relation to those in Acute Insanity and in Dementia, and The Preparation of Tissues for Examination. These papers appeared in this JOURNAL, together with many translations from the Italian, the German, and the French.

The deceased scientist possessed literary and artistic ability of no mean order. He wrote plays and was the author of many poems that were evoked by anniversaries and similar festive occasions among his fellow-countrymen, by whom he was greatly

esteemed for his learning and genial qualities. He was a great lover of music and himself a performer on violin and piano.

The deceased is survived by a widow and one son and three daughters by a former wife.

EMMET C. DENT, M. D.

Dr. Emmet Cooper Dent was born in Macon, Mississippi, in the year 1857. He was a descendant of the Dents and Witherspoons, of Maryland and South Carolina, who were prominent patriotic soldiers and statesmen during the Revolutionary period. His early education was received at the S. W. Presbyterian Theological Seminary at Clarksville, Tenn. Later he begun the study of medicine at the University of Virginia, and completed his course at the Bellevue Hospital Medical College in New York City in 1879. His life work was the study of insanity and the care and treatment of the insane, and for this unfortunate class he sacrificed every personal interest and ambition. On January 29, 1879, he was appointed assistant physician on the medical staff of the New York City Lunatic Asylum on Blackwell's Island, by the Commissioners of Public Charities. He was promoted to assistant medical superintendent December 4, 1882, and was made medical superintendent December 31, 1886. On December 8, 1886, he married Anna Lane Scott, of Mississippi. She with two daughters remain to mourn their loss.

Dr. Dent was active and prominent in his profession. He was a member of the New York County Medical Society; American Medico-Psychological Association, of which he was made secretary and treasurer at the meeting in St. Louis in May, 1904; State Medical Society; Physicians Mutual Aid Association; New York Academy of Medicine; Psychiatrical Society, and others. He was also a member of the Lotos Club, Southern Society, and the Holland Lodge F. & A. M.

In February, 1896, when the New York City Asylums were reorganized and placed under State Care, he was transferred to Ward's Island, continuing there as superintendent of the female department of the Manhattan State Hospital. On June 1, 1905, the two departments were consolidated by act of legis-

lature, and he was made superintendent and treasurer of the entire hospital as it now exists, it being one of the largest of its kind in existence.

To Dr. Dent is due the credit of many advances and ideas in the care and treatment of the insane. He was noted at home and abroad as being one of the first to introduce and develop hydrotherapy as a means of treatment, almost to the exclusion of sedative and tonic drugs. The application of camp life to the care of the acute insane; the use of music, and of special diversions and amusements; advanced surgical care and treatment, and of operative procedure, especially on the female insane received his cordial and intelligent support. He was the author of numerous articles dealing with the above matters. His hospital was one of the first to accept the more modern views in psychiatry, and has made material advances in the way of systematic investigation especially in clinical studies. He gave clinical lectures on the various types and manifestations of insanity, and formed his staff of thirty physicians into a society for the advanced study of psychiatry. Nothing of promise toward the interest of the hospital escaped his attention, he was ever keen and alert for the welfare of the five thousand unfortunates under his watchful care. It may be truly said "he hath done what he could."

Dr. Dent died at 4.15 a. m., January 12, 1906, from endocarditis. The funeral services were held at St. Andrew's Church, New York, and were largely attended by prominent physicians from various parts of the state, and by the members of his staff. He was interred in Woodlawn.

The members of the Council of the American Medico-Psychological Association held a meeting at the Hotel Astor, New York City, on Tuesday, January 16, 1906, at which meeting they appointed, by formal resolution, a committee of three members of the Association, consisting of Dr. Wm. Austin Macy, Dr. George A. Smith, and Dr. Charles W. Pilgrim, to draw resolutions expressive of the loss of their late fellow-member and the late secretary of the Association, Dr. Emmet Cooper Dent.

The Council further directed by resolution that the said committee cause a copy of the resolutions prepared by them to be forwarded to the immediate family of Dr. Dent, and that the said

resolutions also be spread on the minutes of the Association, and other copies be forwarded at once to the principal medical journals.

The special committee appointed by the Council have prepared the following resolutions:

WHEREAS, By the death of our late associate, fellow-member, and secretary, this Association has been deprived of one of its most worthy members and progressive workers; and,

WHEREAS, We, his associates, have lost a dearly loved comrade whom we honored for his integrity, uprightness of character, and sterling worth, whom we respected for his well-known high standards in professional and in ordinary living, whom we admired for his unselfish devotion to all that made for a higher manhood, and for his steady and unflagging interest in the suffering humanity to which he ministered, and whom we all loved as an ever-loyal friend and companion; therefore, be it

Resolved, That we extend to the bereaved family our heartfelt sympathy in their grief and the assurance that his memory will ever remain cherished by us.

WM. AUSTIN MACY.
GEORGE A. SMITH.
CHARLES W. PILGRIM.

Notes and Comment

COMPLEXIONS OF THE INSANE.—In a recent article in the *New York Medical Journal,* Major Charles E. Woodruff, of the U. S. Army Medical Corps, reaffirms his conviction that excessive exposure to light is responsible for much nervous damage to blonds, who, owing to lack of pigmentation, are not sufficiently protected in a climate to which they may have emigrated and in which they have not become acclimatized by reason of the development of a protective pigmentation. Blonds are not only more susceptible to neurasthenia than brunets, but this condition even among the latter is most frequent in America in the Southern States where sunlight prevails and least frequent in the Northern States where dark or cloudy days are more apt to prevail. He believes that the development of insanity may also follow the same rule because in every part of the world statistics show that the greatest number of cases occur in or near the lightest months—May, June, and July. He asserts that this fact is as true for India as for France or Germany. He quotes recent statistics furnished by Dr. Wm. L. Russell, of the New York State Commission in Lunacy, which show a decided trend towards a greater degree of blondness among the residents of institutions for the insane than among the surrounding population. He believes it safe to say that well-pigmented Americans do not suffer from insanity to the same degree as the less protected types, but adds very judiciously that any exact comparison or wholesale generalization is out of the question until the normal population of any region has been more thoroughly studied. It is pretty evident, however, that the man with dark hair, brown eyes, and olive or brown skin has a tremendous advantage in the struggle for existence in light countries and can evidently stand mental and nervous strains which blonds cannot endure except in cloudy places like Scotland or Norway.

Similar statistics furnished by Dr. Hutchins, of the St. Lawrence Hospital at Ogdensburg, N. Y., confirm the same general impression that the native-born insane in Northern New York are of lighter type than the general population from which they are drawn. In Major Woodruff's opinion it is of vital importance that observations be recorded of the complexions of all the sick and particularly of those suffering from nervous affections, as a valuable prophylactic and therapeutic indication. Such data to be of the greatest scientific value should be compared with statistics of the complexions of the general population, urban and rural, native-born and alien, and also native-born of foreign parentage. In his judgment the blond invalids in our population, particularly the tuberculous blonds, have long been injured by sending them South when they should be kept at the North; only brunet invalids will do well at the South.

How to Better the State Hospital Service.—At a recent conference of the superintendents of the New York State Hospitals with the Commission in Lunacy, Dr. William L. Russell, the medical inspector, presented a thoughtful and suggestive paper entitled "In what respects can the State hospital service be bettered?" The object of the paper was to bring to the notice of the medical officers of the institutions there represented special features of excellence which he had found in different hospitals during his visits of inspection to the end that they might be adopted in all the institutions of the State. In effect he endeavored to sketch the ideal hospital and to stimulate all to imitate it. He spoke in turn of: (1) "Clinical and Scientific Work," (2) "Nursing and Ward Service," (3) "Dietaries," (4) "Clothing and Bedding," (5) "Industries," and (6) "Fire Protection," substantially as follows:

(1) "As in the administration of the larger hospitals, and to some extent of all the hospitals, much of the detail relating to the maintenance of established standards of medical administration, and to the carrying out of plans for their improvement must necessarily be left to the first assistant physician, it has seemed advisable to outline some of his duties in relation to the clinical and scientific work. In the hospital under consideration, this officer had formerly a service, but as the demands of general administration have increased he has been relieved of this and now

acts as assistant superintendent. As patients are admitted to the hospital they are assigned by him to the different members of the staff for examination. He arranges for the presentation of the cases at the staff conferences and in doing so keeps informed of the progress and character of the histories and sees that none falls behind unnecessarily. He visits one or both of the reception services and of the wards for sick and surgical cases daily, watching administrative matters and at the same time acquiring from his own observation some knowledge of the new cases and of those suffering from physical illnesses. The special files relating to the joint work of the staff and to the accumulation of medical information are under his special supervision. These are the classification file, the etiological file, the file for general diseases and surgical conditions, the autopsy file, the medical literature file, and possibly others. The abstracts of the case histories are filed as decided upon at the staff conferences, and are added to or changed from one group to another as further information regarding the cases may require. These files represent the accumulated work of the staff, and the first assistant sees that each member does his part. In the treatment of the cases he sees especially that definite indications are met, more particularly those requiring special administrative arrangements, such as surgical operations and physical procedures. He pays special attention to the medical library, the autopsies, the laboratory work, and the nursing service. Some of his duties in regard to these will be referred to later. He has, of course, other responsibilities and duties, but as already explained, only a few points can be referred to under each heading in this paper.

"The duties of the first assistant having much to do with general administration, require his presence in the office more than the other members of the staff. The latter are away from the offices most of the day. The case histories are written in the wards, visitors are as a rule interviewed where they see the patients, and what with special examinations, laboratory work, surgical operations, autopsies, and administration matters relating to the services, the physicians are fully occupied and have little occasion for being in the offices during the business hours of the day. At 11.30 daily, the staff conference is held. The meeting takes place either in a sitting room on one of the wards of the reception service or in the staff library. The superintendent usually attends and all are expected to be on hand promptly. The programme has been arranged by the first assistant, and he or one of the other physicians acts as secretary, keeping the minutes so that unfinished matters are not lost track of. General administrative questions are usually disposed of quickly, though occasionally the whole meeting is given up to them. One or more abstracts of case histories are read and discussed, the patients being if possible, brought in and special features demonstrated. The symptoms are discussed with reference to diagnosis, prognosis, and treatment. If the discussion brings out points that have not been included in the case record, or if necessary information is found to be lacking, notes are made in the abstract, and

the physician who examined the case and the first assistant see that the omissions are supplied later if possible. Cases for discharge are also presented at the staff conferences for revision of the previous consideration of the cases and with reference to the advisability of discharge. Occasionally cases of special medical and surgical interest are brought in. Once a week the staff meet in the evening. At this meeting pathological specimens may be presented. The current medical literature is reviewed, the different journals having been for this purpose assigned to the members of the staff beforehand. As the journals come in through the mails the contents are glanced over by the superintendent and first assistant, and articles and items of special interest are checked in order to bring them more prominently to the attention of the members of the staff. Occasionally a subject is assigned to a member of the staff for review of the literature.

"The more active clinical and scientific work of the hospitals is connected more especially with the care of three classes of patients: (1) The new cases, (2) the acutely sick and surgical cases, (3) the chronic, infirm, and bedridden. I shall, therefore, refer to a few points relating to the medical work on the services where these patients are cared for.

"All the new cases are admitted in the reception service, and many of them remain there until transferred to the convalescent ward or discharged. On each reception service the number of patients for which the physician in charge is responsible has been reduced from time to time, until at present it is one hundred and fifty. A medical interne assists constantly on the service, and sometimes there are clinical assistants. All the members of the staff assist in the complete examination of the cases, and in preparing the records and abstracts. Each reception service is provided with a room equipped with instruments of precision and with facilities for urinalysis and blood examinations. A stenographer works on the service and the case records in white binders are kept in a suitable cabinet on the ward until the cases are transferred or discharged. As far as possible new cases are kept in the reception service, at least until the examination has been completed and the case presented at the staff conference.

"In the interests of economical and efficient medical attention and nursing, the acutely sick and surgical cases are brought together. The rule is that patients with acute illnesses except in the wards for chronic infirm and bedridden, and all cases requiring surgical operation shall be transferred to the sick wards if they are confined to bed ill for more than twenty-four hours. These wards form a separate medical service but the nursing and housekeeping organization are a part of that for the reception wards. The wards are arranged and equipped for general hospital work. A card file is kept on each of these wards showing the nature of the illness or surgical condition with which each patient is affected. When a patient is discharged from the service or dies, the card is sent to the first assistant's desk who sees that it is filed in a special file.

"The service for chronic infirm and bedridden is managed to some extent on general hospital lines. A diagnosis card is kept as on the sick wards. The physician in charge of this service is one who can appreciate what has been described to me by one of the superintendents as the right psychological moment to make requests for autopsies, it being important to secure consent before the patient dies if possible. The tuberculous cases are in this service, and although a separate building is not yet available, a sunny, well-ventilated ward has been taken and the cases are segregated and all precautions taken.

"The autopsies are made usually under the supervision of a member of the staff who has had some special training. He is responsible for the character of the autopsy, and for the selection, preservation, and shipping to the Pathological Institute when necessary, of such anatomical material as should be kept or worked up. The physician who had charge of the case at the time of death and usually other members of the staff assist at the autopsy, and usually most of the staff is present."

(2) "This is all that has been selected from the features relating to the clinical and scientific work of the hospitals, and I shall now pass to the nursing and ward service. One of the most important matters connected with this service is the employment of attendants. This is ordinarily attended to by the first assistant, the superintendent being consulted in special instances. The candidates are seen and examined beforehand when possible. Frequently, however, they are too far from the hospital. The degree of education, age, physique, and general experience are determined from the application and correspondence. Contrary to what seems to be a prevailing opinion, letters from references have been found to be of great service, and the confidential file kept in the first assistant's desk furnishes unquestionable evidence of the interest manifested by many citizens in guarding the hospital from unworthy candidates for positions. Letters forwarded or brought by the candidates are not taken very seriously and the writers of them are communicated with directly and informed that their replies will if they wish, be treated as confidential. As far as possible, probationers are employed on selected wards. These are wards which are not included in the systematic drill of the members of the training school, and the charge nurses or attendants are required to instruct the probationers and to make reports concerning them. The wards are such as are under the supervision of an observant, efficient, and conscientious supervisor, and the charge nurses of which can be relied upon to make intelligent and reliable reports, and to start the probationers right in their work and in their attitude toward the patients and the hospital. At the end of the month of probation those who have remained that long are examined in the rules of the hospital by the first assistant, and a report in regard to them is made by the charge nurses and the supervisors.

"In the training school for nurses efforts are made to give all the members systematic practical instruction and experience in the care of all classes of patients. They serve in regular rotation in different wards of

the reception services, in the sick wards, in the wards for epileptics, and in those for the infirm, untidy, and bedridden. The charge nurses of each of these wards has a definite responsibility in the plan of instruction, and before a pupil nurse is passed from one ward to the next, the record she has made is gone over by the matron, who also gives her a practical examination, and rates her, this rating being used in making up the final average for practical work. The matron has also added greatly to the character of work done and instruction given to pupil nurses on certain wards by post-graduate instruction to the charge nurses on these wards and personal attention to the methods of work on those wards for a temporary period. For the encouragement of reading among the nurses, a small special library has been established for their use, and a journal of nursing subscribed for.

"Our predecessors of forty years ago in the work of caring for the insane did not much believe in classification of the curable from the incurable even within the walls of the same hospital, and indeed the difficulties in intelligently discriminating between individual cases are so great that there is much to justify their views. The modern hospital is, however, as a rule, so large and the character of care and treatment demanded by modern ethical and medical requirements so elaborate that in the medical and nursing services especially, provision must be made for concentration in the management of certain conditions met with in the patients. This is especially noticed in the reception service and in that for the acutely sick and surgical cases. In the former the proportion of nurses to patients is one to three and two-tenths during the day and one to fifteen at night, in the latter the proportion is one to four during the day and one to twelve at night, the proportion varying from time to time with the character of cases. The proportions grow less and less in other services beginning with the infirm, untidy, bedridden, and epileptic and ending with the able-bodied quiet workers when the proportion is relatively very small. The reception and sick wards are in charge of graduate nurses and as far as possible other graduates are employed there as well. On the male service these wards are in charge of women. The supervisors on these services have been selected because of their special qualifications as nurses and executives, and the matron also visits these wards daily in her capacity of nurse.

"Before leaving the medical and nursing features of the hospital, it seems proper to add a few remarks in regard to treatment. As is well known, the so-called physical methods have become quite prevalent in the treatment of the insane. These include hydrotherapy, rest, massage, passive movements, graduated exercises, calisthenics, and electricity. The use of these measures with careful medical attention and nursing has led in this hospital to the complete discarding of mechanical restraint except incidentally in the form of packs, and also to a great reduction in the use of sedative drugs. Continuous full baths are in constant operation on the reception service, and packs and compresses and tonic sprays and douches

are used systematically for such patients on the reception services and throughout the hospital as need them. Quite a large proportion of patients who are restless, untidy, and destructive, are kept in bed. In many instances a careful examination of such cases disclose special indications for treatment and sometimes a period of bed treatment results in marked physicial and mental improvement. Quilted dresses and straight suits are seen on but very few patients. The bed treatment, hydrotherapy, occupation, and special nursing render these unnecessary. A large number of the patients are permitted free access to the grounds, and in many of the wards there are no bars on the windows, which open freely. On some nights not a single bedroom door is locked throughout the institution, and there are never more than a few. The acute curable insane and the tuberculous are given the benefit of outdoor treatment to the fullest extent possible, and even in winter weather they are bundled up in blankets and felt boots and placed out in the sun. The wards for restless walking cases are, as far as possible, emptied right after breakfast, and weather permitting the patients are kept outdoors all day except at meal hours, a few good patients with an attendant being left in each ward to finish the morning work. Fifty per cent of the patients attend amusements and religious services."

(3) "Two features relating to the dietary seem worthy of notice. The individual prescription method in regard to the food of patients requiring something different from the ordinary institution fare has been largely replaced by the employment of a modification of the general hospital system of several dietaries. This system simplifies the work of the doctors and also leads to better results for the patients as the dietaries are revised every two weeks and are more varied than the ordinary special diet. For the reception services and those for the physically sick and surgical cases there are three dietaries referred to as hospital, soft, and liquid. Besides these there are dietaries for epileptics and workers, and occasionally a patient with diabetes or some digestive disorder requires an especially prescribed dietary. The number of patients on each dietary is conspicuously posted on a blackboard in the kitchen and made to correspond with the lists in the dining-room and wards daily by the supervisor. Considerable attention is given to the dietary of patients fed with a tube, and it is varied by potatoes, bean, and pea purees, broths and fruit juices, in addition to milk and eggs. In the preparation of the dietaries they are first submitted to the steward by the chef and are then gone over by the first assistant and the matron and finally submitted to the superintendent."

(4) "In the management of the clothing, ward linen, mattresses, etc., it has been found preferable to fix responsibility as closely as possible by having everything marked for the ward to which it belongs. The clothing is, with few exceptions, marked for individual patients. The matron makes a weekly visit to all clothes-rooms and wards, at the same time making an inspection in relation to the ward housekeeping, and giving such directions in regard to methods, renovations, etc., as may be necessary.

Once a week the matron and the supervisors hold a meeting, at which reports are made and housekeeping matters discussed. Troubles relating to the laundry are brought to the matron unless they have previously been straightened out by the head laundryman and the supervisors. There is a complete checking system in and out of the laundry. Nearly all the dresses and suits for the patients are ironed in the laundry, the remainder being attended to by means of irons in a few clothes-rooms. The condemning follows a regular system, and is under the supervision of the matron for the women, and the steward for the men, the final inspection being made in the storeroom by these officers personally."

(5) "In the industrial department of the institution where so many patients are employed, the work rooms have as far as possible been brought together. A start has been made towards more definite industrial training for idle women. They begin with such simple occupations as hair picking, and simple plaiting or weaving for mats and baskets, and are gradually instructed in more complicated occupations. Forty out of fifty idle women of the chronic class have become useful workers through the instrumentality of a sewing school conducted by an attendant who has shown some aptitude for this work."

(6) "The special feature relating to fire protection which seems worthy of notice is the way in which the attendants have been drilled to empty the wards of patients on signal. Each attendant has an assigned duty and the patients are quickly brought to the exits, the rooms being examined and the doors closed as they are reached, and the extinguishers and hose got ready for use. This drill is carried out in a routine manner once a week and once in two weeks an extinguisher is emptied on each ward."

"*Summary.*—In the interest of brevity many excellent features observed at one hospital or another have been omitted. I hope, however, that enough has been said to suggest that a fuller knowledge of the methods and work of other hospitals would be helpful to each superintendent. There are very marked differences in methods and in results in one branch of hospital work or another throughout the service."

"Some of these differences are no doubt due to widely differing conditions and are inevitable, others are but an expression of a wholesome individuality which is the life of the service; while still others are due simply to a lack of knowledge and conviction that a thing can be done better in a different way. John Stuart Mill in his work on Liberty says that the special duty of a central organ in government should be that of making the knowledge acquired in one place available in another. Should not this be the special duty of this conference?"

The effect of such a paper, presenting as it does a composite picture of the best form of State institution, can but be stimulating to all medical officers. The model institution depicted may as a whole be beyond the excellence of any individual hospital, but

none the less institutions generally will be lifted up and improved by a knowledge of what others are accomplishing or are hoping to accomplish. It has been asserted that Dr. Brigham, of Utica, in an early day often published some improvement as actually made when after all it had only been conceived in his mind for future accomplishment. Let us hope that all the improvements suggested by Dr. Russell have germinated already and that a speedy harvest of good work may follow.

DEATH OF PIERRE ROY.—It is with regret that we note the death of this French alienist which occurred November 3, 1905. Dr. Pierre Roy was born in 1875, and was one of the most distinguished of the younger group of French psychiatrists. His services as interne in the asylums of the Seine and in the Paris hospitals, as chief of clinic of mental diseases at the *Faculté*, and as assistant physician in the public asylums had attracted the attention of his associates. He had published thirty-one papers, several in collaboration with others, notably *Demence precoce* with Dr. Deny in 1902, and on *Gigantisme* with Dr. Launois in 1904. His last work was the address on *Hypochondrie* delivered at the Congress held at Rennes in August, 1905. It is to be regretted that one who had accomplished so much in a comparatively brief period, should not have been spared for further work, of which he gave most positive promise.

INTERNATIONAL CONGRESS FOR THE CARE OF THE INSANE (Congrès international pour l'Assistance des Aliénés).—This congress will meet at Milan, September 26-30, 1906. The Italian Committee of Organization has chosen two subjects for general discussion, the first, "On the Progress of the Care of the Insane and especially of family care in different countries from 1902, the date of the last congress, which was held at Antwerp, until the present time." Second, "On the organization of observation wards, on supervision, and on isolation in asylums and in colonies. Methods which have given the best results." The above are intended shall be open for general discussion. The following subjects are to be discussed only by those whose experience makes them especially competent, and a limit of twenty minutes is set for each speaker: 1. On the care of convalescent insane

and on protecting institutions. 2. On the care of certain of the insane (phrenasthenics, epileptics, alcoholics, moral imbeciles) especially by means of family care. 3. On psychiatric and neuropathic ambulances and dispensaries. 4. On popular sanitariums for the neuropathic. 5. On the economic and social results of the progress of the care of the insane, especially of family care. 6. On state care of the insane.

Those desiring to join this congress should remit their subscription, twenty francs, to Dr. G. C. Ferrari, Bertalia, Bologna, Italy. If a paper is to be read, an abstract should be sent to Dr. Ferrari before the end of April so that it may be printed in French and distributed to each member. Dr. Owen Copp, of Boston, is a member of the International Committee and will probably be glad to give further information. Milan has been chosen as the place of meeting as an International Exposition is to be held during the coming summer, and visitors to the congress will find unusual sources of entertainment.

NEW DEPARTMENT IN THE JOURNAL.—With this number of the JOURNAL a new department, that of "Clinical Psychiatry" is introduced. It is proposed to publish in this department clinical reports of cases illustrating the varied manifestations of insanity, and contributions of carefully prepared illustrative cases will be welcomed. It is perhaps unnecessary to say to intending or possible contributors that they need have no hesitancy in forwarding such reports, if the observations have been carefully made, and the histories well worked out, because of any doubt or difficulty which may arise in naming the psychosis. What is desired is not a list of names taken from some one's classification, with illustrative cases, but on the contrary a series of well reported cases, which our readers may be at liberty to place in any category which suits them.

The introductory article by Dr. Farrar points out what should be sought for in individual cases, and while it is not expected that every observer will follow exactly the lines there laid down it is presented as a suggestive scheme for history taking.

TESTIMONIAL TO DR. HENRY M. HURD.—Our readers will recall that at the meeting of the Medico-Psychological Association in

San Antonio, Texas, in April last, a committee was appointed at the suggestion of Dr. Page to present to Dr. Hurd "a fitting testimonial as an expression of our appreciation of Dr. Hurd's untiring efforts for this Association and for the success of the JOURNAL, and as an indication of the esteem with which he is regarded by us all." Accordingly Dr. Page of Massachusetts, Dr. Burr of Michigan, and Dr. Murphy of North Carolina were appointed such committee to procure and present the testimonial.

In furtherance of this object the local members of the Association met at dinner with Dr. Hurd at the Johns Hopkins Hospital, on the evening of January twenty-sixth.

Near the conclusion of the dinner Dr. Charles G. Hill, acting for the committee, presented to Dr. Hurd in the name of the Association a beautiful silver loving cup with the following letter:

Henry M. Hurd, M. D., LL. D.

DEAR DR. HURD.—At the last annual meeting of the American Medico-Psychological Association, the undersigned were authorized to procure and present to you a token of the appreciation with which your long and untiring devotion to the interests of the Association is regarded, and of the personal esteem in which you are held by the members of this Association.

The duty assigned has been most agreeable, but attended by some embarrassment because of the conviction that no mere material gift, no article of handicraft, however rare and artistic, can adequately represent the pure qualities of friendly esteem and brotherly love.

In obtaining from the various members of the Association expressions in respect to the proposed testimonial, we have been impressed with the true and deep regard which has been evoked by your life, and your work along those lines in which we have a common interest.

Not alone your work, but your manner of working, your manifest convictions of duty, your fidelity to high standards, and your undeviating courtesy through the many years of your official responsibility in connection with the affairs of the Association and the editing of the AMERICAN JOURNAL OF INSANITY, have endeared you to each and all of us.

A loving cup has been selected for you upon which we have caused to be engraved the seal of the American Medico-Psychological Association, and memoranda of your distinguished services in promoting its growth and extending its usefulness.

This cup the members of the Association present to you and beg you to accept as tangible evidence of their abiding affection.

CHARLES W. PAGE,
P. L. MURPHY,
C. B. BURR,
Committee.

Dr. Hill speaking for himself, the guests of the evening, and the members of the Association generally, referred felicitously to Dr. Hurd's services to the Association, as a member, president, secretary, and editor-in-chief of its Journal. The cup was handed to Dr. Hurd, who, at Dr. Hill's suggestion passed it to Dr. Brush to read the inscriptions engraved upon it, which are as follows:

HENRY MILLS HURD, M. D., LL. D.,
FROM THE
AMERICAN MEDICO-PSYCHOLOGICAL
ASSOCIATION
IN RECOGNITION OF
HIS UNTIRING DEVOTION TO ITS INTERESTS.
1905.
A MEMBER SINCE 1879,
SECRETARY AND TREASURER 1892-1897,
VICE-PRESIDENT 1898,
PRESIDENT 1899,
COUNCILLOR 1901-1904,
MANAGING EDITOR
AMERICAN JOURNAL OF INSANITY 1897-1904.

Dr. Brush took occasion to refer to his long acquaintance with Dr. Hurd, and the help and benefit which he had derived from it. He spoke of the efficient work Dr. Hurd had done in the reorganization of the Association, and the high standard to which he had raised its JOURNAL, and congratulated himself and the Association that, in assuming Dr. Hurd's work in managing the JOURNAL, he was still to have the benefit of Dr. Hurd's advice and experience.

He spoke of the doctor's well-known characteristic, that of being always ready often at the sacrifice he knew of much personal comfort and convenience, to help and advise others, and said that at the dinner to Dr. Chapin in December, 1904, he had taken great pleasure when introducing Dr. Hurd as one of the speakers, to refer to this characteristic and to apply to him as particularly fitting the lines:

"So, if I live or die to serve my friend,
'Tis for my love,—'tis for my friend alone,
And not for any rate that friendship bears
In heaven or on earth."

The editors of the JOURNAL are especially gratified at this mark of appreciation of the work and character of their chief and mentor. They have had opportunities for knowing of the sacrifices of time, ease, and even health which Dr. Hurd has made in behalf of the Association and its JOURNAL, and have felt on many occasions prickings of conscience when they realized how great the burden was which he was carrying and how little they really did to ease the load.

Affairs of this kind are particularly pleasant and occur far too infrequently. The dinner to Dr. Chapin to celebrate the completion of fifty years of efficient and epoch-making work in hospitals for the insane and the presentation of the testimonial to Dr. Hurd, will, we hope, be examples which will be imitated in one way or an other in the future. All of us can remember examples of men in our profession, as well as of men in other departments of work, whose spirit and accomplishment we have admired, whose friendship and example have been treasured and helpful, but to whom, because of that curious reticence which prevents men from expressing to each other their real feelings, we have never said one word of cheer or congratulation, or extended one word of simple acknowledgement for the help they have been to us and to others.

Something of this kind helps men who are carrying burdens we often know little of, removes clouds which they imagine are covering the sun, smooths paths which are rough, and adds to the general sum of human happiness and brotherly confidence and love. Let us have more of it. Few men will, however, be found more worthy of such expressions than our friend and associate Dr. Hurd, to whom long life—" love, honor, obedience," " troops of friends " he already has.

Dr. Hurd has sent to the committee the following letter:

BALTIMORE, January 27, 1906.

To Dr. Charles W. Page, Dr. P. L. Murphy, and Dr. C. B. Burr, Committee of The American Medico-Psychological Association.

GENTLEMEN.—Owing to many unforeseen circumstances, it was not practicable to gather the local members of the American Medico-Psychological Association together until last evening, when eight members accepted my invitation to dinner. During the dinner, Dr. C. G. Hill presented to me the beautiful loving cup, together with your most kind letter. If I were worthy of all the kind messages which it contained, and felt sure that

I had accomplished enough to warrant such good opinion and appreciation, I should be very happy. I can only say that I have enjoyed working with the members of the Association and in its behalf, and it has been my keenest pleasure to see it grow in efficiency and good work. Individually I have done but little; collectively the Association has done it all. I count myself most fortunate to have been permitted to work at a formative period in the progress of our specialty, at a time when the construction of institutions no longer engrossed the thoughts of our members, but their organization and greater medical efficiency were all-important.

I am deeply grateful for your expression of appreciation of my efforts and for the beautiful cup. I have never seen one as artistic and graceful, and I am sure that none ever carried the good-will and kind thoughts of a nobler or more self-sacrificing body of men. I thank you and through you the American Medico-Psychological Association for the evidence of your good-will and kind feeling.

With deepest respect, believe me, as ever,
Sincerely yours,

HENRY M. HURD.

DR. DENT'S SUCCESSOR AS SECRETARY.—At a meeting of the Council of the American Medico-Psychological Association, held in New York, on January 16, Dr. Charles W. Pilgrim, of the Hudson River State Hospital, Poughkeepsie, N. Y., was elected Secretary and Treasurer to succeed the late Dr. Emmet C. Dent, whose sudden death is chronicled in this number of the JOURNAL.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION—CHANGE OF PLACE OF MEETING.—At a special meeting of the Council of the Association, held in New York, January 16th, it was found desirable to change the place of meeting for the sixty-second annual session. The Association is to meet in Boston, Mass., on Tuesday, Wednesday, Thursday, and Friday, June 12th to 15th, 1906. The headquarters of the Association will be at the Hotel Vendome. Dr. George T. Tuttle, of the McLean Hospital, Waverly, has been made chairman of the Committee on Arrangements.

We understand that a large number of papers has been promised.

Notes on New Books

Nervous and Mental Diseases. By ARCHIBALD CHURCH, M. D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in the Northwestern University Medical School, Chicago, and FREDERICK PETERSON, M. D., Ex-President of the State Commission in Lunacy, New York, Clinical Professor of Neurology and Psychiatry, Columbia University, New York. Fifth edition. Thoroughly revised. (Philadelphia and London: W. B. Saunders and Company, 1905.)

The book appears in its fifth edition. In general make-up it is similar to the former editions, and exceeds the fourth edition by fifteen pages. The typographical work and binding are good.

In the section on Nervous Diseases by Dr. Church, many slight alterations have been made. In the article on Tubercular Meningitis the rhythmical contraction and dilatation of the pupils when the body is bent forwards and backwards, described by Squires, has been added to the paragraph on Symptomatology. In Chapter VIII—Diseases of the Eighth Cranial Nerve, the localizing symptoms of tumor of the root of the auditory nerve, as described by Fraenkel and Hunt, have been added.

It is unfortunate that the chapter on the Cerebral Cortex-Localization has not been revised. The author still retains the old localization of the motor area although it has been definitely agreed upon by authorities for several years that the motor area does not extend posterior to the Rolandic fissure.

In the chapter on Cerebral Hæmorrhage the mental symptoms which may occur are dismissed with the brief remark that "in the old it may precipitate the mental deterioration of senility and it may be followed by organic dementia," which is a very incomplete summary of what may occur. The good results following anti-syphilitic treatment of tabes as given by various French authors have been noted in the section on treatment of that disease.

As a whole the section on Nervous Diseases is well written and will serve as a text-book for students.

The section on Mental Diseases by Dr. Peterson is much inferior in every way to the preceding section.

The author gives several classifications of the Anglo-American, German, and French schools for reference. The classification used in the section is that of the Greco-Roman period with the addition of circular insanity, general paralysis, and paranoia and short chapters on Manic-Depressive Insanity and Dementia Præcox. The only concession made to the advance

in Psychiatry in the last twenty years is the addition of Kraepelin's classification, two pages describing the manic-depressive group, five pages on Dementia Præcox, and an excellent review of the work of Kraepelin, Ziehen, and Wernicke by Adolf Meyer. To any one who desires to obtain a knowledge of modern psychiatry this review is the only valuable part of the section.

Dementia is still divided into senile, secondary, and primary, and while the author says that the term dementia is used improperly, used by the laity as synonymous with insanity, he utterly ignores the modern view that dementia is a permanent, incurable deterioration of the mind.

To General Paralysis the author devotes twelve pages. This disease is among the best known, is one of the most frequent, and one of the most important mental diseases, and surely deserves more space than that allotted to it. To Paranoia which is one of the most infrequent psychoses, he gives twenty-four pages. Auto-intoxication is mentioned several times, but no mention is made of the group of psychoses caused by auto-intoxication as described by Régis and others.

As a whole the section cannot be recommended to any one who wishes to get a working knowledge of Psychiatry as it is understood at the present time.

C. R.

Abstracts and Extracts

Ricerche sul ricambio materiale nei dementi precoci. Terza nota: Ulteriori Ricerche Urologiche (Azoto totale, rapporto tra azoto dell' urea e azoto totale, acidita totale.) Dei DOTTORI A. D'ORMEA E F. MAGGIOTTO. Giornale di Psichiatria Clinica e Tecnica Manicomiale, Anno XXXIII, Fasc. I-II, 1905.

In this investigation the subjects were two men and two women in each of the three forms of dementia præcox, hebephrenic, catatonic, and paranoid. All of these were placed upon the same diet, the urine was collected for 24 hours, and a daily examination made for 5 days. The determination of the total nitrogen was made by the Kjeldahl method, the nitrogen of the urea being estimated by the hypobromite method of Yvon. The total acidity was determined by means of a solution of sodium hydrate 1 cc. of which neutralized 1 cgm. of oxalic acid, phenolphthalein being used as an indicator.

The results are tabulated for each individual as well as for the whole series. Five examinations were made on normal individuals to fix a standard. From these examinations it was determined that the quantity of urine passed in 24 hours was 1650 cc., sp. g. 1019, total nitrogen 14.759 gm., nitrogen of urea 12,889 gm., the ratio between the total nitrogen and that of the urea being 87.32, the total acidity being 6249 gm. The average results were somewhat higher in the men than in the women, the averages of the whole series being as follows: Total quantity of urine in 24 hours 1141 cc., sp. g. 1018.5, total nitrogen 11,066, nitrogen of urea 8855, the ratio between being 79, and the total acidity 2906.

The conclusions arrived at in the previous experiments that the average quantity of urine eliminated in 24 hours by precocious dements is diminished, and that there is also a slight lowering of the specific gravity, are confirmed, and the following are also formulated: 1. A diminution in the total quantity of nitrogen eliminated in the urine. 2. A fall in the ratio between the nitrogen of the urea and the total nitrogen. 3. A marked diminution in the total acidity of the urine.

W. R D.

Ricerche sul ricambio materiale dei dementi precoci. Quarta nota: Ricerche comparative sulla eliminazione del bleu di metilene per via renale negli stati di depressione e di eccitamento della demenza precoce e di altre psicosi. Dei DOTTORI A. D'ORMEA E F. MAGGIOTTO. Giornale di Psichiatria Clinica e Tecnica Manicomiale, Anno XXXIII, Fasc. III-IV, 1905.

This investigation was undertaken to complete the research, of which the third note or report is referred to above. Again taking up the first investigation with its theory that the rapidity of the elimination of methylene blue does not depend primarily upon any disease of liver or kidneys but is an index of general metabolism depending on the general eliminating power of the body and especially upon the nervous system, d'Ormea and Maggiotto have carried on experiments similar to those formerly described (see this JOURNAL, Vol. 61, p. 555).

The subjects for this investigation were as nearly as possible in the same physical condition, leading the same sort of life and were given the same diet. The subjects for study of the depressive period numbered 24, five cases each of dementia præcox, manic-depressive insanity, pellagrous insanity, and involutional melancholia, and four cases of hysteria. The subjects observed of the period of excitement were 23, five cases each of dementia præcox, manic-depressive insanity, phrenasthenia, and paresis, and three cases of hysteria. The technique employed was similar to that of the previous study (see above). Part of the results are tabulated as follows:

TOTAL DURATION OF THE ELIMINATION OF METHYLENE BLUE.

a.

In dementia præcox, depressive period	132	hours.
" normal individuals	96	"
" hysteria, depressive period	84	"
" manic-depressive insanity, depressive period	76	"
" involutional melancholia	76	"
" pellagrous insanity, depressive period.....	64	"

b.

In dementia præcox, period of excitement....	132	hours.
" normal individuals	96	"
" hysteria, period of excitement.....	84	"
" manic-depressive insanity, per. of excitem't	76	"
" phrenasthenia, period of excitement.....	68	"
" paresis, period of excitement.....	64	"

Other results are given with minuteness in many tables, and together with the case abstracts offer ample proof of the results as well as of the care with which this study has been carried on. The conclusions to the article are as follows:

1. In dementia præcox there is a special and characteristic change in the elimination of waste material shown:

a. Means of a characteristic curve in the elimination of methylene blue, a discontinuous polycycle.

b. In the general character and composition of the urine, which is diminished in quantity has a lowered specific gravity, a marked diminution of

urea, of uric acid, phosphoric acid, sulphuric acid, total nitrogen, total acidity, and a lowering of the ratio between the nitrogen of the urea and the total nitrogen, with a slight increase of chlorides.

2. The elimination of methylene blue in other psychoses studied is, on the contrary always more rapid than in the normal individual and its curve is a continuous polycycle.

3. The elimination presents the same special character in each psychosis, and is influenced but in a slight degree by the syndrome of depression or of excitement which the same patient may show. The elimination in the depressive period is slightly slower than in the period of excitement.

4. In the present state of knowledge dementia præcox may be considered as an entity and is distinct from other mental diseases in probably having its cause in a change in waste material perhaps producing a toxic substance in the sexual organs, and causing degenerative changes in the brain.

5. The elimination of methylene blue by reason of the constant characteristics which it presents in cases of dementia præcox, offers a means of diagnosis in this psychosis.

W. R. D.

La formola emo-leucocitaria nella demenza precoce. Del ORESTE SANDRI. Rivista di Patologia nervosa e mentale, Vol. X, p. 464, Ottobre, 1905.

The conclusions to this research are as follows:

1. The first stage of dementia præcox is accompanied by changes of the leucocytic formula indicating a condition of intoxication of the organism; namely, an increase in the total number of leucocytes with a slight polynuclear increase.

2. The appearance of catatonic symptoms in the hebephrenic and paranoid forms is accompanied by changes in the leucocytic formula; namely, a marked increase of mononuclears.

3. The total number and the ratio between the formed elements of the blood does not show any change in the chronic paranoid and hebephrenic forms.

4. The changes in the leucocytic formula above described may be as well compared and with equal value in the recent catatonic form as in the case which has existed for years and may be callel chronic.

W. R. D.

Di una speciale forma del globulo rosso nella demenza precoce. Dei DOTTORI G. PIGHINI E G. PAOLI. Rivista Sperimentale di Freniatria, Anno XLI, p. 100, 1905.

By means of a special technique devised by Pighini the authors have studied the blood in ten cases of dementia præcox, abstracts of whose histories are given. The conclusions are as follows: 1. The red blood cells in dementia præcox, stained by a special method, show a characteristic structure, presenting generally an umbilicated appearance and a slight

diminution in size. 2. Such an appearance is not met with in the majority of physical or mental diseases. The only cases showing a similar appearance were two chlorotics and a severe epileptic. It is probable that in time such special blood changes of dementia præcox will be considered not as pathognomic but as an index of the severe metabolic changes existing in this disease.

The special staining technique is as follows: Blood films are fixed in the flame of an alcohol lamp or better in an Ehrlich oven at 110° C. for 5 to 10 seconds. They are then placed in the following mordaunt for 13 to 14 hours:

4% aqueous solution of corrosive sublimate 20 cc.
4% aqueous solution of molybdate of ammonia.....30 cc.
Hydrochloric acid, C. P. 19 drops.

The hydrochloric acid is added drop by drop to the mixture of sublimate and molybdate, a yellow-green liquid resulting. The film is washed in running water for an hour and stained in carbol thionin (tionina fenica di nicolle) for ½ to 1 hour, then fixed by a solution of molybdate for 10 to 15 minutes. After free washing in water the film is dried by the heat of a lamp and passed through a series of alcohols, then xylol, finally being mounted in balsam. As contrast stains a saturated solution of acid fuchsin or 1% aqueous solution of erythrosin or eosin may be used before the final washing with water.

W. R. D.

Les formes frustes de la Démence Précoce. Par GUSTAVE MONOD. Thèse de Paris, 1905.

This thesis is a careful study of the simple dementing form of dementia præcox to which attention has been especially directed by Otto Diem. Monod illustrates his thesis by descriptions of two cases. The "medico-legal view" which concludes the thesis is especially noteworthy. In these patients all moral instincts are diminished and they are dishonest without calculation, incendiaries without reason, and frequently become vagabonds. Many of the chronic offenders in the army deserters and others are cases of dementia præcox, and among the most difficult to discipline. The treatment should be preventive. Overwork should be avoided. Woman should retain the place she has held for centuries and avoid the cares and responsibilities of the world as much as possible. A system of re-education may be established with advantage.

Monod's conclusions are:

Among the forms of dementia præcox is one characterized by a slight diminution in the mental faculties. Few of these cases are seen in asylums, but are seen among the vagabonds, alcoholics, and prostitutes.

The preventative means are:

To teach every physician the psychiatry so that he can fill the office of expert in the courts and to examine mentally every person who comes before a court.

The reparative means are:

After condemnation to get the sufferer out of prison and treat him as an insane man and not as a criminal, and to have regular psychiatric inspections of the prisons.

Diphtheroid Organisms in the Throats of the Insane. By J. W. H. Eyre and J. Froude Flashman. British Medical Journal, 28 Oct., 1905.

The authors summarize Dr. Robertson's hypothesis as follows: "That by syphilis and perhaps other diseases, the defensive powers of the organism are so reduced in certain directions that the individual falls a prey to the destructive action of the diphtheroid organism, which, he contends, is almost constantly associated with this class of insanity (general paralysis); and, further, that it is this organism or its toxin which gives the paralytic aspect to the disease."

The object of the investigation is stated to be based on the hope that the inquiry might throw some light on the question of whether Dr. Robertson had to do with a "local infection" in the asylum from which he drew his material, or whether his results in this particular held good in the case of other asylums. One hundred and thirty-eight living cases and material from thirty-three *post-mortem* inspections were examined. The material was drawn from two asylums, the London County Asylum at Colney Hatch and the London County Asylum at Claybury. The *post-mortem* material was obtained exclusively from Colney Hatch Asylum during a period of three months ending December 31, 1903.

Cultures from living patients were made from the pharynx, fauces, and carious teeth. The differential diagnosis of the diphtheroid bacillus was invariably made on the result of the examination of the methylene-blue stained specimen derived from the blood-serum cultivation.

In the *post-mortem* subjects cultures were made from the cerebro-spinal fluid, swabbings from the pharynx, heart-blood, swabbings from bronchi, bile and from scrapings from the mucous membrane of the intestine.

As a result of the observations the following conclusions were formulated:

1. That the percentage incidence of all "diphtheroid" organisms in the throats of the insane (17.3 per cent) is not in excess of that noted in the sane population (18.5 per cent) outside the walls of an asylum.

2. That the percentage incidence of genuine B. diphtheriæ (5.07 per cent) in the throats of the insane is smaller still (a large proportion of the diptheroid organisms noted were common saprophytic members of the diphtheria group of bacilli), and compares well with 6.9 per cent in the healthy sane.

3. That there is no evidence to show that B. diphtheriæ is more common in the throats of general paralytics (5 per cent) than in the throats of cases of other forms of insanity (5.1 per cent).

4. That the number of general paralytics examined *post-mortem* is too small to enable any definite conclusions to be drawn therefrom. At the

same time it is a significant fact that B. diphtheriæ was not isolated from any of these cases.

5. That the majority of the strains of B. diphtheriæ isolated from the throats of the insane are of low virulence and slight toxicity, and so compare in these respects with the types found occasionally in the throats of the healthy sane.

6. That having due regard to the above conclusions, we are unable to trace any causal connexion between B. diphtheriæ and general paralysis of the insane. C. R.

Pamphlets Received

Cancer of the Breast. End Results of One Hundred Operations. Homer Gage, M. D. Reprinted from the Journal of the American Medical Association, November 11, 1905.

Maryland Agricultural College Bulletin. October-December, 1905. Vol. 2, No. 2.

The Maryland Agricultural College Quarterly. August, 1905. No. 29.

The Maryland Agricultural College Quarterly. November, 1905. No. 30.

Report of the Trustees of the Massachusetts Hospital for Epileptics for the year ending September 30, 1905.

The One Hundred and Eighth Annual Report of the Board of Managers of the Maryland Hospital for the Insane to the Governor of Maryland, November, 1905.

Fifty-Eighth Annual Report of the Trustees of the Massachusetts School of the Feeble-Minded at Waltham, for the year ending September 30, 1905.

Nervous and Mental Manifestations of Pre-pernicious Anemia. F. W. Langdon, M. D. Reprinted from the Journal of the American Medical Association, November 25, 1905.

Tenth Annual Report of the Board of Managers of the Springfield State Hospital of the State of Maryland, Sykesville, Maryland, to the Governor of Maryland, October 1, 1905.

Fifty-Second Annual Report of the Trustees of the Taunton Insane Hospital for the year ending September 30, 1905.

Forty-Sixth Annual Report of the Board of Directors and Superintendent of Longview Hospital, Cincinnati, Ohio, to the Governor of the State of Ohio for the year 1905.

The One Hundred and Thirty-Second Annual Report of the Eastern State Hospital, of Virginia (at Williamsburg), for the fiscal year ending September 30, 1905.

Fifth Annual Report of the New York State Hospital for the Care of Crippled and Deformed Children for the year ending September 30, 1905.

Fourteenth Annual Report of the Trustees of the Foxborough State Hospital for the year ending September 30, 1905.

Squibb's Materia Medica for 1906.

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THE HEBOID-PARANOID GROUP (DEMENTIA PRÆCOX).—CLINICAL RELATIONS AND NATURE.[1]

BY F. X. DERCUM, M. D.,

Professor of Nervous and Mental Diseases, Jefferson Medical College, Neurologist to the Philadelphia Hospital.

The subject of dementia præcox justly occupies the center of the psychiatric stage of to-day. The views of Kræpelin have excited widespread discussion. On the one hand, we have his ardent disciples, a band ever increasing in number, and, on the other, a more limited group composed mainly of French writers, who either reject his views altogether or who accept them in only modified forms. We will not concern ourselves with the literature of this discussion which has already become quite extensive, for the questions at issue involve rather a point of view than a difference as to observed facts. They are essentially questions of interpretation.

The rôle played by Kahlbaum and Hecker and by the numerous authors that have succeeded them—especially within the last ten years—are so well known as not to require even a passing reference upon this occasion. However, it is Kræpelin above all others whose utterances insistently demand our attention; for it is to him that we are indebted not only for a brilliant generalization, but also for directing psychiatric thought into new and, it may be added, entirely natural channels. The gradual transitions by which Kræpelin arrived at his conception in regard to dementia

[1] Read by invitation before the Neurological Section, Medical and Chirurgical Faculty of Maryland (Baltimore Neurological Society), March 14, 1906.

præcox is well illustrated by the changes in the arrangement and treatment of the subject in the successive editions of his text-book. In the fifth edition of his Psychiatry, he still makes use of the term dementia præcox as designating a form of mental disease practically the equivalent of the hebephrenia of Hecker and Kahlbaum, and he limits the term to this designation. In this edition (the fifth), catatonia is still treated separately and is not embraced under the heading of dementia præcox, and the like treatment is accorded to dementia paranoides. In the sixth edition, however, of his work, Kræpelin greatly expands the term dementia præcox; in fact, he gives it a new meaning. He no longer describes a specific form under this name, but applies it equally to hebephrenia, catatonia, and dementia paranoides; in other words, these diseases are now treated by him as only so many different forms of one affection.

Time prevents a detailed consideration of so extensive a subject, and we are necessarily limited to a brief consideration of essential facts. An analysis reveals that the essential features of dementia præcox are a mental impairment to which there are added in varying degrees, the elements of depression and exaltation, and to which must be added the further fact that in the vast majority of cases, the mental impairment is progressive. It would appear that the three forms, hebephrenia, catatonia, and dementia paranoides are distinguished from each other somewhat as follows: First, hebephrenia is a progressive mental impairment with relatively slight additions of the elements of depression and expansion; there are present in addition hallucinations and unsystematized, fragmentary, and constantly varying delusions. Catatonia is characterized by a similar impairment, progressive in its character, to which are added, as before, in varying degrees, depressive and expansive features, but especially motor symptoms in the form of fixed altitudes, cataleptoid spasms, stereotypy, automatism, verbigeration, and even explosive motor phenomena such as convulsive seizures. Finally in dementia paranoides we have an impairment as before progressive, and as before associated with depressive and expansive elements, but in which the delusions assume a form approximating or suggesting paranoia. The justice of including the various forms under one head has been fully

demonstrated by Kræpelin and by other writers. The mere fact of the existence of transitional forms between hebephrenia and catatonia, strongly suggests the essential unity of the two affections; and, while the paranoid form seems more distinctly removed, there can be no doubt that, as Kræpelin points out, the occurrence of such symptoms as stereotypy in cases clearly paranoid in the character of their delusions, is an evidence of affinity between the paranoid and the other forms. Such a case has for months past been under my personal observation. The case is that of a man, thirty-eight years of age, who, with a bad neuropathic family history and a history of several serious nervous breakdowns in adolescence and early adult life, developed some four or five years ago painful auditory hallucinations and confused and disordered ideas of persecution, of danger by fire and murder to himself and those whom he loved. Gradually the symptoms became more pronounced until his commitment to an institution became necessary. Here it was noted that for hours at a time he would either sit in a chair or lie upon his bed in an attitude of profound abstraction, his hands folded before him, his lips in constant motion, reciting and repeating unintelligible phrases. When aroused, as he could be without much difficulty, he would enter into rather an intelligent conversation as to the time of the day, the character of the weather, or his immediate surroundings. Without much effort he could be led into a discussion of the telepathic communications which he believed he was receiving—conversations that he heard going on in distant States—the communications being persecutory in their character. While fixation and true catatonic rigidity were not features of his case, attitudinizing, posturing, stereotypy, verbigeration were unquestionably present. The delusive beliefs of persecution gradually became more and more systematized until they have of late assumed the frank form of a belief in conspiracy.

Other instances might be cited as evidences of a relation between dementia paranoides and the other forms, and yet this relationship is much less close than exists between hebephrenia and catatonia. Recognizing this fact, writers are not wanting, such as Meeus and Stransky, who believe that the paranoid forms should not be included in dementia præcox. As late as last

August, Kræpelin himself, in a lecture entitled "Fragestellungen der klinischen Psychiatrie,"[1] insists that the purely provisional nature of dementia præcox must not for a moment be lost sight of; that the designation itself bears the stamp of an expediency which had its origin in a distinct period of our clinical development; and that the doctrine of dementia præcox is based upon the Kahlbaum-Hecker studies in catatonia and hebephrenia. "When," says he, "I reached the conviction now shared by many observers that it is not possible in the light of modern clinical experience to separate these two forms sharply from one another, indeed that catatonic and hebephrenic conditions are quite usually met with in one and the same patient, it became necessary to find a designation which could embrace both clinical forms. A grouping, undertaken solely as a provisional interpretation, did not seem to me a sufficient reason to invent an entirely new name. I therefore determined to make use of the designation dementia præcox already introduced by the French investigators, in the hope that further studies in this field would lead to a better grouping and therewith to an authoritative and more appropriate designation of the different clinical pictures which, according to my own convictions, existed in this great new field. The designation dementia præcox I chose because it implied nothing more than the unfavorable prognosis and the appearance of the disease in youthful age, two features which, at the time, seemed to me to coincide closely with the newly described symptom group.

"Further experience has made it doubtful whether these presumptions are correct. At first the age limit, especially for the catatonic and the paranoid forms, had to be moved upward farther and farther. Indeed we even became acquainted with the group of 'late catatonias' which actually belong to a beginning old age. Of course, doubt may still arise whether this last group really belongs to the great mass of dementia præcox, and whether in individual cases we are really not dealing with out-croppings of former and perhaps unrecognized diseased states. Notwithstanding, it cannot be contradicted that the original exclusive conception of the relation of dementia præcox to the developmental period can no longer be maintained. The question as to the prognosis of

[1] Centralbl. f. Nervenheilk. u. Psych., Aug., 1905.

the disease cannot as yet be decided with certainty." Kræpelin then proceeds to speak of the undoubted improvements in cases of dementia præcox which permit of a return of the patient to the ordinary activities of life, and which are regarded unquestionably as recoveries. However, he dwells upon the care which should be exercised to see whether such recoveries are really genuine and complete, and dwells on the necessity of carefully excluding in the diagnosis manic-depressive insanity.

Speaking once more of dementia præcox, he refers by analogy to such terms as hypochondria and melancholia, which are in universal use, although no one nowadays ever thinks of referring the affections which they designate to the hypochondrium or to black bile. He further questions whether in our imperfect knowledge of the subject at present, a new name would not, in the next step in the progress of our science, suffer from similar objections as those to which dementia præcox is open. He is further of the opinion that the great range itself of dementia præcox imposes the probability that we have to deal not with one disease, but with a group of disturbances, the individual forms of which are to be separated from each other. He points by comparison to paresis and shows how from this symptom group syphilitic and arteriosclerotic brain diseases have been separated, as also the Korsakow's psychosis. He further adds that there is no doubt that the present division into the simple, hebephrenic, catatonic, and paranoid forms does not solve the problem. He further informs us that all of his numerous attempts, based upon a very extensive series of observations, to find serviceable groupings, have up to the present failed. He raises the question, whether completely cured cases of dementia præcox, if there be such, do not constitute a group by themselves which should be separated from the great mass of the dementias.

It is noteworthy that in this lecture Kræpelin lays stress upon the relation between hebephrenia and catatonia and regards them as the foundation stone of dementia præcox. It is noteworthy further that in this connection he does not speak of the paranoia group, nor does he in any part of the lecture distinctly and definitely include this group in his conception of dementia præcox. His position throughout indeed departs unquestionably from that

in the last edition of his text-book, in which, as is well known, he includes in dementia præcox what he calls the first form of dementia paranoides and also what he calls the second form of dementia paranoides. This second form corresponds to what he formerly termed phantastic paranoia, what Mœbius calls paranoia completa, and Magnan délire chronique à évolution systématique.

In his fifth edition, Kræpelin limits the term dementia paranoides to cases characterized by disconnected persecutory and expansive ideas, which rapidly pass into a persistent terminal confusion or dementia. In his sixth edition, he made a decided change; this consisted in including, as just stated, under dementia paranoides the group of cases which he had formerly designated as the "phantastic form" of paranoia. The change was a very radical one, for it disposed at one blow of a large mass of cases universally regarded as belonging to paranoia. It includes almost the totality of the délires systématisés of French writers—the délire chronique of Magnan, and leaves nothing of paranoia proper except what he formerly called the "combinirte Form" of paranoia and which corresponds to Magnan's délires systématisés des dégénérés. In his fifth edition, Kræpelin depicted as phantastic paranoia, the form in which the delusions gradually withdraw themselves from the influence of actual perceptions, and are based more and more on hallucinations and independent invention; the disease presents the usual phases of depression, transformation of the personality, and expansion. In his seventh edition, as is of course well known, Kræpelin adheres to this radical substitution. That this group of cases really belongs under the head of paranoia, I believe is established by the following: In the first place, it is impossible to sharply differentiate the cases from those to which Kræpelin has now limited the term. The latter constitute a group which is characterized by a very slow evolution of symptoms and by a very prolonged course, but in which the stages of depression, transformation of the personality, and expansion are alike discernible. The cases are characterized by the fact that their delusions are based more or less largely on misinterpreted perceptions rather than on hallucinations, and that the delusions are perhaps better defined and better

systematized than in the "phantastic form" or délire chronique, and yet these differences are only relative. They are, after all, only variations of degree and not of kind. Even if we take the point in regard to the absence of hallucinations in the "combinirte Form" as the standard of differentiation, we find that, the moment we analyze it, it breaks down. Not only is it a fact that special sense hallucinations—hallucinations of hearing and of sight—do occur in some cases of this form, but my own observation has convinced me that, while special sense hallucinations are relatively uncommon, general cœnesthenic and psycho-motor hallucinations are by no means infrequent, and that the latter, as in the other forms of paranoia, form the foundation stone on which is based the mental attitude and the emotional tone of the patient.

It is not improbable that there is an essential unity between all of the degenerative affections beginning with hebephrenia and ending with Kræpelin's combinirte Form of paranoia or Magnan's insanity of the degenerate, but what is gained by including them all in the same group? That this has actually been done by some of the enthusiastic disciples of Kræpelin, I need hardly remind you. They have not hesitated to go farther than the master. It is not unusual to meet with articles in the journals questioning the very existence of paranoia. Is there not grave danger of minimizing and perhaps altogether nullifying important clinical distinctions? Of course it all depends upon the point of view. It can be justly maintained that there is an affinity between Kræpelin's first form of dementia paranoides and his second form or the phantastic form of paranoia, just as there is an undoubted affinity between this last form and the combinirte Form. But even if this be true, what purpose is served by giving them all from hebephrenia on a common designation? When discussing this subject upon a former occasion, I drew the following parallel from the field of physics: There are in the solar spectrum seven colors, each color passing by a most gradual transition into another. Shall we, because it is impossible to draw hard and fast lines—because we cannot say, for instance, where violet ends and indigo begins—say that violet and indigo are the same; or that green and yellow—most opposite in their reaction on the human sensorium—are the same because they pass by insensible transi-

tion one into the other? Practical experience teaches us that no sharp differentiation can be drawn between the various forms of dementia præcox—hebephrenia, catatonia, and dementia paranoides. Every now and then we meet with cases of hebephrenia in which passing motor phenomena, convulsions, transitory rigidity, or stereotypy is noted, or again cases of dementia paranoides in which like features cause an approximation to catatonia. Similarly I believe that it is often difficult, if not impossible, to draw a differentiation between a dementia paranoides and a phantastic or hallucinatory paranoia, just as it is impossible always to make an absolute differentiation between the latter and the paranoia of Magnan—the insanity of the degenerates, the "combinirte" form of Kræpelin. These facts, however, do not justify us in wiping out clinical distinctions which are exceedingly great when we contrast the members at the two ends of the series, for instance hebephrenia with the combinirte Form of paranoia—just as great as the contrast between red and violet at the two ends of the spectrum. If we close our eyes to important and in practical life necessary clinical distinctions, we are in grave danger of erecting dementia præcox, as Percy Smith puts it, into an "Universal Krankheit."

Discussions are nugatory that are barren of results, and whether we agree or not as to the grouping of our cases, it behooves us to consider the subject in its practical bearings. What are the questions that must claim our attention? These, I take it, are two in number. The first has to do with the differentiation of dementia præcox from the various forms of manic-depressive insanity. The practical importance of this differentiation is so great as to need only to be mentioned. How the attitude of American asylums for the insane is changing in regard to this question has been only recently pointed out in a very interesting paper by Dr. Farrar, of the Sheppard and Enoch Pratt Hospital.

The various forms of dementia præcox resemble manic-depressive insanity in their associated phases of depression and expansion, and yet these phases of depression and expansion never truly resemble, nor closely approximate, the corresponding phases of the manic-depressive psychosis. Surely we never see in a case of hebephrenia and catatonia the phase of depression presenting

clearly, or typically the attitude of self-accusation, the insistence upon the moral unworthiness, or the typical delusion of the unpardonable sin. Elements of unworthiness and self-accusation, if present, are relatively infrequent and not pronounced. At best, if present, they are but fragmentary, made up of unrelated parts and undefined, while on the other hand painful ideas characterized by suffering, torture, poisoning, burning, mutilation, inflicted upon them are usually present in such number and prominence as to dominate the picture and to indicate more or less clearly the reference by the patient of his sufferings to agencies without himself—to agencies in the external world; exactly the reverse of the attitude which obtains in melancholia.

In the third form of dementia præcox, dementia paranoides, the attitude of mind is still more clearly persecutory. The sufferings of the patient are always referred to causes outside of himself. This difference between melancholia and the depressive period of dementia præcox is of course most evident when we compare a melancholia with the paranoid form, but an analysis of the symptoms shows it to be equally true of the other forms. Other points of difference of course obtain between melancholia and the depressive phases of dementia præcox, but for the present these may be set aside.

With regard to the expansive phases of manic-depressive insanity and the expansive phases of dementia præcox, it is again true that the various phases only roughly resemble each other. In the mania, in addition to other symptoms, there is present an intense emotional exaltation, combined with a relatively high degree of lucidity, so that the patient, nothwithstanding his expansion, is not infrequently coherent throughout. Further hallucinations, which play so great a rôle in both the expansive and depressive phases of the various forms of dementia præcox, play here no rôle whatever. Other things equal, the existence in any number or in any degree of prominence, of hallucinations in an expansive case militates against the diagnosis of a simple mania and is distinctly in favor of a dementia præcox.

Further, melancholia and mania *both* possess a relatively high degree of lucidity. Incoherence occurs in mania in direct proportion to the violence of the attack and the intensity of the excite-

ment, but incoherence is not confusion. Confusion, it is true, may occur in both melancholia and mania, but if so, it is merely an incident and not an integral part of the affection. When it occurs, it is a complication, dependent upon such incidental factors as exhaustion or intercurrent physical affections. How great is the contrast in this respect with dementia præcox, particularly with hebephrenia and catatonia. Here confusion dominates the picture. Certainly all the elements of confusion are present: hallucinations and illusions, associated with fugitive, changing, unsystematized delusions. In periods of excitement, this confusion may attain the intensity of delirious episodes and, on the other hand, it may deepen, as it habitually does in catatonia, into stupor. Delirium, confusion, and stupor are of course closely related states. The element of confusion in dementia præcox is habitually lost sight of in the discussion of the subject. Because of the name, we habitually think of dementia præcox as a disease which is a dementia primarily, and of which the dementia is the most prominent feature. Let us see whether the facts really justify such a position. Let us briefly glance at some of the striking features of a dementia and we should, I contend, use the term dementia in the sense of quantitative change, that is, *loss* of faculty, not mere change of quality or change in the mode of action. We may, I think, with propriety take as an illustration dementia as it is seen in its simple senile form, uncomplicated with hallucinations or with delusions. What is it that we find? There is in the very beginning an impairment of memory, an impairment which makes itself evident at first in the failure to remember how the daily tasks that make up the life of the individual are to be performed; errors in figures and calculation, forgetfulness of all the daily obligations and proprieties, all of these symptoms depending upon undoubted quantitative mental change. As is of course well known, this loss of memory involves at first recent events, those which have made the least profound impression upon the mind. Indeed, the memory of senility is so well known as to make a detailed statement unnecessary. We need only recall the loss of the names of common objects, of the names of intimate friends and relatives, of the needless repetition of statement, of the garrulousness of old age. How great the in-

roads upon memory are with the advancement of disease is so well known as to hardly require comment; how professional attainments, acquired languages, the whole of the acquired knowledge of the middle and the adolescent periods of life are finally lost, leaving nothing but the acquisitions of the earliest age.

When we compare this condition of the memory with that which obtains in dementia præcox, we note a striking difference. Disorders of memory are distinctly *not* the initial features of dementia præcox. Instead we have presented to us an account of the *hallucinations* of the patient, hallucinations which are in the beginning painful in character—hallucinations especially of hearing, sometimes of the other special senses, and sometimes clearly somatic. Associated with these hallucinations, delusions make their appearance, which like the hallucinations are painful in character. They consist of a mingling of hypochondriacal and persecutory ideas. These ideas, especially in hebephrenia and catatonia, are essentially unsystematized and fragmentary, and consist of crowded and unrelated elements. In other respects the mental condition in dementia præcox is but slightly changed at first. Particularly is this true of memory. Memory in the beginning is well preserved. It is only after the disease has persisted for a relatively long time that evidence of actual loss of memory is present. Indeed it is frequently preserved to an astonishing degree after the disease has been long established.

Other points of differentiation also suggest themselves. In dementia præcox, the consciousness of the patient, stuporous states of course excepted, usually remains remarkably clear; in senile dementia, on the other hand, consciousness is usually more or less clouded. Again, in dementia præcox, orientation is well preserved, the patient being usually in correct relation with his environment, stuporous states being again excepted. In senile dementia, on the other hand, the patient not infrequently has very gross impairment of orientation, failure of proper recollection of the surroundings being a not uncommon feature. It is of course true that cases of dementia præcox *later on* present changes in keeping with quantitative mental loss, such as the failure of memory, failure to acquire new facts or to properly co-ordinate them, failure of proper emotional reaction, and allied phenomena, but

these elements certainly do not characterize the beginning of dementia præcox. Its striking feature in the beginning is not dementia; it is confusion. The elements, of which confusion consists, hallucinations, illusions, unsystematized and fragmentary delusions, are all present and in a dominant degree. The only interpretation which can be placed upon these facts is that dementia præcox in the beginning is really a confusion. Régis,[1] who was among the first to point out the importance of infections and intoxications in the development of insanity, and who aided largely in bringing psychiatry into touch with modern medical thought, expresses himself unequivocally to the effect that the affections classified under dementia præcox are cases of mental confusion. Régis was at first inclined to classify dementia præcox under the degeneration psychoses; later, to differentiate between a youthful and a senile dementia, according to the age of the patient. Finally, however, he classified dementia præcox under mental confusion. Both dementia præcox and confusion, he maintains, have as a probable etiology intoxication; both show similar early symptoms, neurasthenic, hysterical or distressing sensations about the head; both present equally mental obtusion, both present unsystematized dream-like ideas, the same changes from excitement to stupor, and the same somatic symptoms, pupillary, muscular, etc. The analogy is so close that some authors, such as Christian and Anglade, find it difficult to make a differential diagnosis. According to Régis, in the scheme of mental confusion, dementia præcox represents the chronic terminal phase of an incurable acute confusion without reference to its special toxic origin, the form that it assumes, or the age of the patient. Again, no less distinguished an alienist than Macpherson, of Edinburgh, while he accepts dementia præcox, classifies it under confusional insanity; but, no matter how we classify it, the important fact remains that dementia præcox is in its beginning a confusion, and this fact cannot be too strongly insisted upon. When we recall the known rôle which infections and intoxications play in the production of delirium, confusion, and stupor, it is certainly not going too far to infer that dementia præcox is probably due to a toxin—a toxin which at first calls

[1] Revue de Psychiatrie, Vol. VIII, 1904, p. 150.

forth by its action upon the cortical neurones hallucinations and their dependent delusions, and later on, in given cases, brings about their destruction. Serieux, Trepsat, Dide, and others strongly favor such a view and while pathological researches have thus far been barren of definite results, the findings of Ballet, Alzheimer, Klippel and Lhermitte, Dide, Dunton, and others, of degenerative changes in the cortical neurones are not, to say the least, incompatible with toxic action; if indeed they do not indicate it.

In the absence of definite scientific knowledge, a view of the toxic origin of dementia præcox must, of course, be regarded as only tentative, and yet it would seem to possess a certain degree of practical value, especially from the standpoint of prognosis. We know from actual experience, both within and without the asylums, that the prognosis of simple confusion, like that of simple delirium, and of simple stupor, is good, that the vast majority of cases recover. In fact all cases in which the toxic symptoms, rather than the dementing symptoms predominate, should be regarded as cases in which the possibility for a favorable outcome is far greater than those in which the dementing symptoms predominate. Therefore in a given case of dementia præcox, as long as the symptoms of a mental confusion alone are present, or as long as added factors pointing to dementia are but slightly marked, the possibility of recovery, complete or partial, must still be said to exist. In other words, we are to apply here a general principle of psychiatric prognosis, that is, as long as the symptoms of actual quantitative mental loss are absent or but slightly marked, we have no right to predicate an unfavorable outcome. The fact that cases of both hebephrenia and catatonia may recover is of course well known, although the percentage of recoveries is as yet small. May it not be that in these cases of recovery nature succeeds in producing an antitoxin, so that the patient becomes immune and recovery ensues?

May it not be also that the etiology of this great group is multiple and that there are at work in different forms different toxins? The action of all poisons upon the cortex is intrinsically the same. All give rise to hallucinations, illusions, fragmentary and unsystematized delusions, and these are the elements which

make up confusion. All of the poisons induce, other things equal, in varying degrees, delirium, confusion, and stupor. How true this is of the infections and intoxications from without, is so well known as not to need elaboration. Further, it not infrequently happens that poisons the most unlike produce results remarkably similar, as instance the action of such widely different poisons as alcohol and lead. Both, in given cases, produce delirium, both in given cases produce confusion, both in given cases produce dementia. Indeed, they even resemble each other in some of their details, as witness the predominance of visual hallucinations in both alcohol and lead delirium.

In dementia præcox, the toxin or toxins are probably formed within the body. At least the uniformly negative clinical history with regard to infections and intoxications from without points overwhelmingly to such a conclusion. As to the source of such poison or poisons, we are of course as yet in the dark. That their production is in some way related to the one great factor of the inherited neuropathy present in the mass of these cases, is extremely probable; for, neuropathy, in general terms, means not only gross departure in morphology, arrests, and deviations affecting the skull, the limbs, the vascular apparatus, and other structures, but it means especially departure from the normal of the organism as a whole. That the ductless glands and other tissues, each of which contributes its modicum to the various juices of the body, the blood, the lymph, the cerebro-spinal fluid, as the case may be, should also be involved in this imperfect and aberrant development, is extremely probable. Certainly it would seem that the conditions present in neuropathy are such as to favor diminished resistance on the one hand, and the development of a toxic metabolism on the other.

As opposed to the relatively favorable import of the predominance of confusion in cases of dementia præcox, especially if dementia has not as yet made its appearance, we have in the paranoid forms, systematization and fixation of delusions as a distinctly unfavorable sign. Confusion merely means toxic action —a purely functional disturbance. Systematization and fixation, on the other hand, must mean structural change, possibly destruction of paths of association. It is naturally true, therefore, the

paranoid form of dementia præcox offers the least hope of recovery. Notwithstanding, cases do at times recover, or at least enter upon more or less prolonged remissions. Dewey, some two years ago, reported a case of recovery of paranoia—apparently a case of hallucinatory paranoia. In my own experience, I can recall several instances in which at least decided improvement occurred, and one in which a remission was established extending over a period of ten years. Notwithstanding, it is unquestionably established that the prognosis becomes increasingly unfavorable in proportion to the systematization and the fixation of delusions.

It is necessary to refer briefly to the cases described by Diem[4] as dementia simplex. Diem has described twelve cases in which simple and uncomplicated dementia supervened in early life, and in which there were no elements of depression or expansion, no hallucinations, no delusions, no grimaces, no clownism, no stereotypy. Seven additional cases reported by him, because of their transitional character, must be rejected as not constituting really simple dementias. Again Fuhrmann[5] has lately described three cases, all of alcoholic parentage, in which an acute juvenile dementia supervened, a dementia, which he believes should be separated from Diem's dementia simplex and also from dementia præcox. It is very probable that with the progress of psychiatry, still other forms of true juvenile dementia will be isolated. They should, however, be grouped by themselves. Such dementias are true primary dementias, and should be clearly separated from dementia præcox, that is, if dementia præcox is to stand for a specific hebephrenic-catatonic-paranoid syndrome, the essential feature of which is a toxic confusion, and of which dementia may be, and very frequently is, a residual outcome—a termination.

As Kræpelin himself admits, the name dementia præcox is very unsatisfactory. It must be regarded as provisional only, sooner or later to be displaced by a designation more in keeping with the nature of the affection; this, as the writer believes, the facts prove to be primarily a confusion and only secondarily a dementia. In this light the name becomes not only incorrect but, because of the possibility of recovery, unwarranted; and, because of the impres-

[4] Archiv f. Psych., 1903, p. 111.
[5] Archiv f. Psych., 1905, p. 817.

sion it makes upon the lay mind in forecasting a hopeless future, singularly unfortunate. Indeed few diseases are so unhappily named.

The name of a disease should be based on some prominent symptom or group of symptoms or upon some pathological finding, if there be such, and not upon the mode of termination of the disease. Because of the wide range of symptoms in the related affections, and because of the absence of pathological data, the difficulty of suggesting a name is such as to render an attempt futile at present; but is a name really necessary? Will not a very general expression, such as the "heboid-paranoid group" imply unity of the affections and intimacy of relation just as much as a more specific name? Besides, such an expression would leave altogether open the question of prognosis.

The names hebephrenia and catatonia are names well established in psychiatry. Notwithstanding the presence of transitional forms, they stand for definite symptom groups. The same is also true of paranoia. If the objection be made that the term paranoia covers a wide range of affections, it may be answered that the situation is not improved by changing the label to dementia paranoides; the number and variety of the affections remains the same. The word paranoia has not only the advantage of having acquired a special meaning, namely insanity with more or less systematized delusive beliefs, but it has also the advantage of being a mononym, a one-word name. It also has claims which are historical.

According to Werner,* it is an old Greek word which signifies contrariness or perversity, and was used by both Plato and Aristotle, though interchangeably with mania. It was first used in German literature by Vogel in 1764, but who seems to have used it off and on interchangeably with mania and melancholia. Heinroth in 1818 appears to have been the first to use the word in the same or similar sense as it is used at the present day. However, the credit of its introduction into modern psychiatry belongs to Mendel, and with this introduction began an important reform in German psychiatric terminology which up to this time had been one of great confusion. A certain degree of clearness and unity of view followed, for it enabled physicians to group under a con-

* See Werner, "Die Paranoia," Stuttgart, 1891.

venient name the various forms of delusional lunacy. Further, while it is true that the name embraces a number of affections, this does not militate against its use, provided qualifying adjectives or phrases are employed to designate the special form intended. Kræpelin does not hesitate to separate out a dementia paranoides, erste Form, and a dementia paranoides, zweite Form, but assuredly these expressions convey little as to the forms designated. That this is less true of many of the names in common use becomes evident as soon as we examine them. It is noteworthy also that there is a remarkable correspondence on the part of many writers, especially French and German, as to the general division of paranoia. Kræpelin, as just stated, recognizes a dementia paranoides erste Form, a dementia paranoides zweite Form, and also a paranoia. When we analyze them we find that they correspond substantially with forms described by others. Thus dementia paranoides erste Form, corresponds to the délire d'emblée des dégénérés of Magnan, the délires systématisés aigus of other French writers, to the hallucinatorische Wahnsinn of Krafft-Ebing, to the Acute Verrücktheit of Westphal, to the paranoia acuta of Mendel, Schüle, and Siemerling, to the paranoia hallucinatoria acuta of Ziehen, etc. Kræpelin's dementia paranoides zweite Form, corresponds to the délire chronique à évolution systématique of Magnan, to the délires systématisés chroniques of other French writers, to the paranoia completa of Mœbius, to the (former) phantastic paranoia of Kræpelin, to the paranoia hallucinatoria chronica of Ziehen, to the paranoia chronica of Siemerling, and to the now neglected designation Wahnsinn. The third form, that to which Kræpelin now restricts the term paranoia, corresponds to the délires systématisés dégénérés of Magnan, to the (former) combinirte Form of Kræpelin, to the paranoia simplex chronica of Ziehen, the Verrücktheit of other German writers, and largely to the paranoia originaria of Sander. Certainly a correspondence such as this, though naturally imperfect, foreshadows an eventual agreement as to the forms in which paranoia presents itself. It would be most valuable if entirely satisfactory designations for each of these three forms of paranoia could be found—designations that would find general acceptance, but the day has probably not yet arrived for

this. The first form, because of its close relations to the hebephrenic-catatonic group, might readily be called the heboid form or heboid paranoia. The second form, because of the prominent rôle played by the hallucinations, could well be called paranoia hallucinatoria, a named already in use, while the third form, because hallucinations are present in a much less marked degree, if at all, and because the delusions are evolved from actual though misinterpreted experiences, might be called paranoia simplex, as has already been done by Ziehen.

The subjoined diagram and table presents the groups in series, as well as the various names by which they are known.

HEBOID GROUP.		PARANOID GROUP.		
HEBEPHRENIA.	**CATATONIA.**	**PARANOIA with heboid affinities.** — **HEBOID PARANOIA.**	**PARANOIA with systematized delusions closely connected with hallucinations.** — **PARANOIA HALLUCINATORIA.**	**PARANOIA with systematized delusions evolved independently of hallucinations.** — **PARANOIA SIMPLEX.**
		Dementia paranoides, erste Form, (Kræpelin). **Délires systématisés aigus.** Délire d'emblée des dégénérés, (Magnan). Hallucinatorische Wahnsinn, (Krafft-Ebing). Acute Verrücktheit, (Westphal). Paranoia Acuta, (Mendel, Schüle, Siemerling). **Paranoia hallucinatoria acuta, (Ziehen).**	Dementia paranoides, zweite Form, (Kræpelin). Délire chronique à évolution systématique, (Magnan). Délires systématisés chroniques. Phantastic Form, (Kræpelin). Paranoia Completa, (Mœbius). Paranoia hallucinatoria chronica, (Ziehen). Paranoia chronica, (Siemerling). Wahnsinn, (Snell, Schüle).	Paranoia, (Kræpelin). Combinirte Form, (Kræpelin). Délires systématisés des dégénérés, (Magnan). Paranoia simplex chronica, (Ziehen). Verrücktheit, (Westphal, Sander). Paranoia Originaria, (Sander). Paranoia chronica (Siemerling).

A CASE OF GLIOMA OF THE FRONTAL LOBE WITH INVASION OF THE OPPOSITE HEMISPHERE.

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(*From the Pathological Laboratory of the Danvers Insane Hospital.*)

The following case of glioma of the frontal region led to death after symptoms lasting ten weeks. The autopsy showed discrete nodules of neuroglia tissue in the cortex of the right frontal lobe, together with extensive confluent areas of softening in the medullary center beneath. One of the nodules had invaded the opposite hemisphere.

From the gross appearances the question might arise whether the new growth did not originate in several centers. The microscopic examination showed identity of structure both in the nodules and in the tissue of the medullary center, with apparent differences due to necrosis of parts of the tumor. The tumor is best taken as monocentral, and the apparently discrete nodules are best interpreted as processes of a single tumor, necrotic in the middle and varying in rate of growth along different radii.

In examining the tissues at the line of contact between the tumor and the invaded pia mater, the methods recently advised by Mallory[1] have proved indispensable.

I. Clinical History.

F. F., born in Belgium, a mill-worker of forty-one years, was committed to the Danvers Insane Hospital, September 6, 1904. Onset, two months before commitment, with continual headache

[1] F. B. Mallory, A Contribution to the Classification of Tumors. Journ. Med. Research, XIII, 2, January, 1905.

and general lassitude. Later he began to vomit after meals without nausea and became subject to incontinence of urine and feces. Mental symptoms developed at the same time: dulness, loss of memory, disorientation for time, depression. A week before commitment he had been arrested as drunk.

He was too weak to walk alone on admission and showed a coarse tremor of hands and a slight tremor of tongue. The patellar, achilles, triceps, and wrist reflexes were exaggerated. Babinski sign absent. Pupils reacted to light, also consensually. Sensation good as far as tested. Motor restlessness during examination: with eyes closed, turned head from side to side frequently; drummed with fingers on side of bed. Was got to count correctly to twenty. In saying alphabet, repeated only a few letters. On being asked leading questions, was got to say he heard voices; but nothing more definite in respect to hallucinations was elicited. The urine contained casts and a large trace of albumin.

He lay in bed a week without change, dull, weak, occasionally untidy. Then came a rather sudden change. Restlessness and continual changes of posture of limbs set in, without well-defined convulsion. Next morning (nine days after entrance) deep stupor had developed, with relaxation of extremities, non-reaction to pain, head turned to right, right external strabismus, right pupil larger than left, non-reaction of pupils to light, knee-jerks equal and moderate, and sharp upward contraction of great toe in both feet on stroking soles. Death the next morning.

I am indebted for these notes to Dr. H. M. Swift, assistant physician to the Danvers Insane Hospital.

Clinical Summary.

Belgian mill-worker of forty-one years. Headache, vomiting, incontinence, lassitude, dulness, memory-disturbance, depression, two months before commitment. Once arrested as drunk. Dulness, weakness, tremors of hands and tongue, exaggerated knee-jerks and arm-reflexes. Eight days after commitment, restlessness set in, followed next day by stupor, deviation of head to right and right external strabismus, dilatation of right pupil, and Babinski sign on both sides. Death ten days after commitment, about ten weeks after onset of symptoms.

II. Anatomical Findings.

Following are the findings in the head with a summary of findings in the trunk. Autopsy four hours after death.

Head.—Scalp not notable. Diploëtic spaces of calvarium in temporal regions show congestion. Inner surface of calvarium moist. Dura non-adherent, tense; bulging in temporal regions. Sinuses contain thin red clot. Inner surface of dura dry. Falx adherent to pia mater over rostrum.

Pia Mater dull, nowhere thickened or hazy. Contiguous surfaces of frontal lobes under falx are lightly adherent.

Vessels.—Veins of pia congested. Arteries normal, except 7 mm. of the basilar artery at the vertebral end, which is pale and hard.

Substance.—Convolutions of convexity flattened. Focal lesions are visible in the right hemisphere in three places: the right rostral convolution, the tip of the right frontal lobe, and the inner margin of the right frontal lobe midway between the tip of the lobe and the anterior central convolution. (See text figures 1 and 2.)

The lesion in the right rostral convolution is a somewhat firm mass about the size of a hickory nut, which bulges across the longitudinal fissure to be received in a depression 1 cm. deep in the opposite hemisphere. The outer surface of the mass is darker than the adjacent cortex and dotted with opaque yellowish-gray flecks. Section shows a reddish-gray surface with numerous vascular points and areas of hemorrhage besides opaque yellowish-gray streaks of homogeneous soft material. The lesion is surrounded externally by a thin shell of altered cortical substance and internally by an opaque yellowish-gray stripe 3-4 mm. wide.

The lesion of the tip of the right frontal lobe is separated from the rostral lesion by an interval without gross change, but is similar in appearance to the first. The adjacent cortical surface is puckered and of increased consistence.

The third focal lesion is quite distinct from the two others but a little smaller, and superficially recalls the appearance of a septic infarct. The area is rather sharply circumscribed, and its surface is slightly raised, finely roughened, reddish, and dotted as if with small abscesses. There is, however, no surrounding zone of

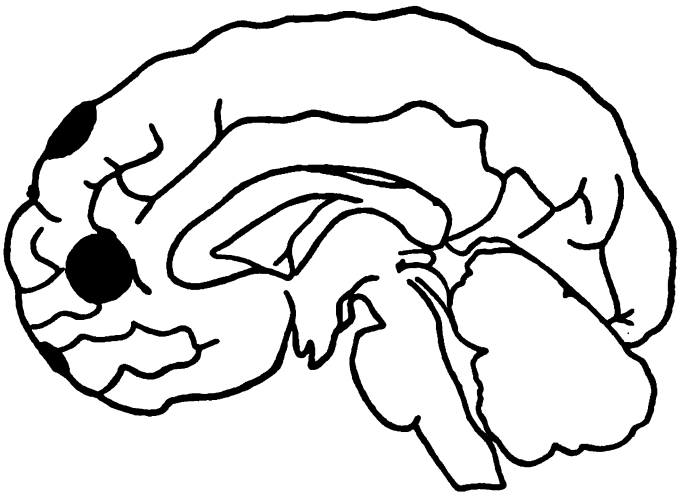


FIG. 1.—(Dalton, 1885, Plate A, vi.) Mass in right rostral convolution, with two other masses as shown on median aspect.

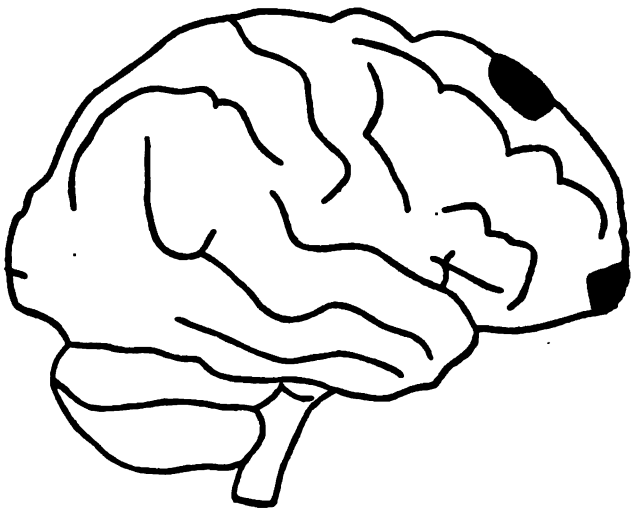


FIG. 2.—(Dalton, Plate A, ii.) Masses on outer aspect of frontal lobe.

hyperemia. The section surface is similar to those of the other focal lesions.

The centrum semiovale in the right frontal region is soft and full of hemorrhages as far back as a plane about 3 mm. posterior to the tip of the caudate nucleus. In the middle of this hemorrhagic area is a homogeneous grayish-brown semi-fluid material. The remainder of the centrum semiovale of the right hemisphere is edematous.

The left hemisphere shows no focal lesion except the depression into which fits the lesion of the right rostral convolution. The tissues lining the depression and the surrounding convolutions are puckered and cartilage-like. The white matter beneath the depression is hyperemic.

The autopsy was performed by Dr. A. M. Barrett, to whom I am indebted for the material.

Anatomical Summary.

Three discrete lesions of right frontal lobe. Hemorrhage and edema of right centrum semiovale in frontal region. Chronic focal leptomeningitis. Congestion of pial veins. Chronic diffuse nephritis. Slight bilateral bronchopneumonia. Anomaly in origin of mesentery.

III. Microscopic Findings.

The organs of the *trunk* show little of interest. The *heart muscle* shows central brown pigmentation of a small proportion of fibers. Portions of the *lung* show congestion and an even cellular exudate with little fibrin, masses of many kinds of bacteria, chiefly lanceolate diplococci, many of the latter enclosed in polynuclear leucocytes. The bronchial mucosa is usually well preserved, but the lumen may contain poorly staining tissue fragments loaded with bacteria. The *spleen* shows a surplus of trabeculæ, an increase of reticulum, hyaline changes in the walls of Malpighian arterioles, areas of phagocytic cells in center of a few Malpighian bodies, pigment-phagocytes and numerous polynuclear leucocytes in the pulp spaces. Many of the central *liver* columns show pigmentation. The *kidney* shows overgrowth of

fibrous tissue in the pyramids, thickening of the capsule of some glomeruli, homogeneous casts chiefly in straight tubules, and thickening of intima in arteries in intermediate zone. *Pancreas* and *adrenal* negative.

Structure of Tumor.—The tumor is a glioma, growing rapidly. Every region of the tumor examined shows numerous fibrils staining differentially by the methods of Weigert and Mallory for neuroglia. Mitoses in the tumor cells are frequent in some regions. Cells with two polar nuclei and cells with several nuclei are common in all regions; neuroglia fibrils stand in close association with many of these multinucleate cells. Centrosomes, or centrosome-like structures, are demonstrable both in the dividing cells (which are caught as a rule in the spireme phase) and in resting cells. The dots occur in pairs or in larger numbers up to eight. The dots vary in distribution. The pairs midway in the cell-body between two polar nuclei occasionally suggest the mid bodies in the end phase of some forms of cell division. In other cases it would seem difficult to call them anything except centrosomes. At times the dots have a more diffuse distribution in the cell-body, and their function can hardly be assigned. In all loci the dots fail to be quite spherical but are rounded and rod-shaped. The dots in pairs, which most resemble centrosomes, are biscuit-shaped. The dots do not occur in great numbers or in the arrangement characteristic of the tumors regarded as of ependymal origin. There is nowhere in the tumor a tendency to the formation of canals or ependymal cysts.

Besides displaying signs of rapid cell-division, the tumor is malignant in another sense, unusual for gliomata. This glioma breaks the usual rule that gliomata fail to invade non-nervous tissues. This is evident both from the gross description of the nodule in the right rostral region and from the presence of islands of neuroglia, clumps of neuroglia cells, single neuroglia cells, and wandering neuroglia fibrils in many places in the pia mater beyond the main line of contact between the tumor and the surrounding tissue.

But, although the tumor is rapidly growing and infiltrates the connective tissues as well as the nerve tissues, there is no evidence

of true metastasis, such as has been reported by Mallory[1] in a glioma which took its rise outside the nervous system. There is also no evidence of selective growth along connective tissues, as has recently been shown by Mallory to occur in a case examined at the Children's Hospital by Dr. H. C. Low. The present glioma may, however, be ranked as more malignant than most cerebral gliomata, since it shows in a minor degree the property of infiltrating the connective tissues.

A more detailed account of the tumor follows:

The vascular supply of the tumor is free. Thrombosis of the veins is frequent and is probably responsible for much of the necrosis and cyst-formation in the interior of the tumor. In a few places there is evidence of early overgrowth of intimal cells in the small veins, although the surrounding tissues are still well-nourished. More frequent than the endothelial proliferation is a proliferation on the part of adventitial cells. Mitoses among adventitial cells are fairly frequent in a few places near the outer border of the tumor under the pia mater.

What may be termed the stroma of the tumor is a fairly dense fibrous tissue which is so deep in places as to suggest the remains of old sulcal processes of pia mater. Islands of dense fibrous tissue, several mm. in diameter, are brought out by the connective tissue stain deep in the interior of the tumor (Plate VII, Fig. 4). The term stroma is warranted furthermore by the occurrence of small islands of densely fibrillar neuroglia. (Plate VII, Figs. 1, 2, detail in Fig. 5) in many places in the pia mater, and in fibrous processes stretching in from the pia mater. With the lower powers, it cannot always be shown that these apparent neuroglia islands are actually cross-sections of processes of the tumor mass. Many of the islands can be shown in serial sections to be in continuity with the tumor mass. With the higher powers, this question becomes less important, since throughout the fibrous tissue in the neighborhood of the islands or processes are numerous isolated neuroglia cells or pairs or rows of cells enclosed in fusiform cages

[1] F. B. Mallory, Three Gliomata of Ependymal Origin, Journ. Med. Research, 1902, Vol. VIII, pp. 1-10, and A Contribution to the Classification of Tumors, Journ. Med. Research, XIII, 2, January, 1905.

of neuroglia fibrils (Plate VIII, Figs. 5, 6, 8). The isolated cells, or cell-groups limited by single cylinders of fibrillæ, are set as if in definite clefts of the fibrous tissue, but they fail to grow in lymph or vessel spaces. Besides the isolated neuroglia cells and cell-groups, scattered neuroglia fibrillæ can be found wandering off straight or slightly curved through the wavy fibrous tissue. It may be that these fibrils wandering free through the fibrous tissue (Plate VIII, Fig. 5) are related with the peculiar invasive property shown by this tumor. This cannot be proved. The chances are that the fibrils grow blindly along lines of least resistance. No alteration in the character of the connective tissue in these regions can be made out.

The tumor varies somewhat in the character of cells met in different regions. There are sudden transitions in character in two loci, at the pia mater and adjacent to the characteristic cystic spaces. Elsewhere, though there is considerable variety, the transitions are gradual. The sharp boundaries of the tumor as it meets the pia mater and the definite outlying masses of neuroglia have been described. The cystic spaces filled with fibrin or granular coagulum are occasionally marked off sharply from the well-nourished masses and exhibit indentations corresponding with adjacent pervious vessels (Plate VII, Figs. 1 and 2). Sometimes, between the free fluid of the cyst and the densely fibrillar subpial tissue there is interposed a looser but still fibrillar tissue which is apparently prevented from complete solution by a few strands of vascular tissue (Plate VII, Fig. 3).

IV. Summary.

1. Man of forty one, dying ten weeks after onset of symptoms pointing to cerebral disease, showed three apparently discrete nodular lesions of the right frontal lobe, one of which had pierced the pia mater of the longitudinal fissure and invaded the left rostral convolution.

2. Examination of the hemorrhagic and edematous tissue of the medullary center beneath the nodules showed bands of tissue like that in the nodules. If the tumor started from one focus in

the medullary center, the extent and character of the lesion may be due to rapid growth, unequal along different radii. Thrombosis accounts for the necrotic and cystic center of the mass.

3. The tumor is a glioma, rapidly growing and malignant in a sense unusual for cerebral gliomata, in that it invades non-nervous tissue.

DESCRIPTION OF PLATES.

Plate VII, Figure 1.

Outer border of tumor nodule, overlaid with a thin sheet of pia mater and pierced by a stout process of fibrous tissue which contains islands of neuroglia. Cystic spaces in tumor, containing fibrin. Phosphotungstic acid hematein with ferric chloride differentiation.

Plate VII, Figure 2.

Outer border of tumor nodule. Large central cystic space, with overlying subpial shell of tissue thrown into folds. Rich supply of small vessels with deep adventitial tissues. Stout process of pia mater, containing small islands of new-growth. Stain as above.

Plate VII, Figure 3.

Outer border of tumor nodule. Above, pia mater with vessel. Next, the densely fibrillar outer shell of the tumor, sharply marked off from less well-nourished clear tissue with fewer fibrils. Below, cystic space. Stain as above.

Plate VII, Figure 4.

Interior of tumor. Characteristic island of fibrous tissue or deep process of pia mater with numerous vessels. The whole surrounded by new-growth. The fibrous tissue here stains dark. Anilin blue connective tissue stain.

Plate VIII, Figure 5.

Detail from section figured in Plate VII, Figure 1. Slender processes of fibrillar tissue, imbedded in connective tissue which is left unstained (by ferric chloride differentiation after staining with phosphotungstic acid hematein). The connective tissue is everywhere penetrated by isolated neuroglia fibrils, often some distance away from their cells of origin.

Plate VIII, Figure 6.

Cells isolated in fibrous tissue of a process of pia mater. Two nuclei, with overlapping ends and without demonstrable cell-bodies, enclosed in a fusiform cage of coarse agglutinated fibrils. Phosphotungstic acid hematein.

PLATE VIII, FIGURE 7.

Imitation of Golgi picture in very deeply stained phosphotungstic acid hematein preparation from tumor.

PLATE VIII, FIGURE 8.

Young neuroglia cell with fibrils faintly shown (not stained by phosphotungstic acid hematein). Six dots in interior of cell body at a distance from nucleus.

PLATE IX, FIGURES 9, 10, 11, 12.

Cells showing one or more dots in cell-bodies, sometimes enclosed in pale space (Figure 12).

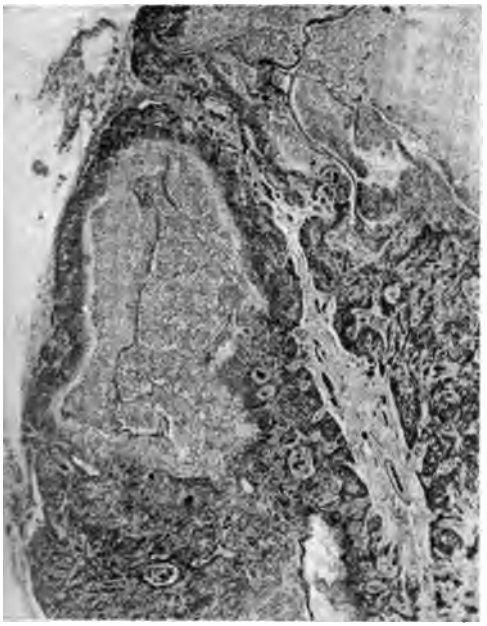


FIG. 1.

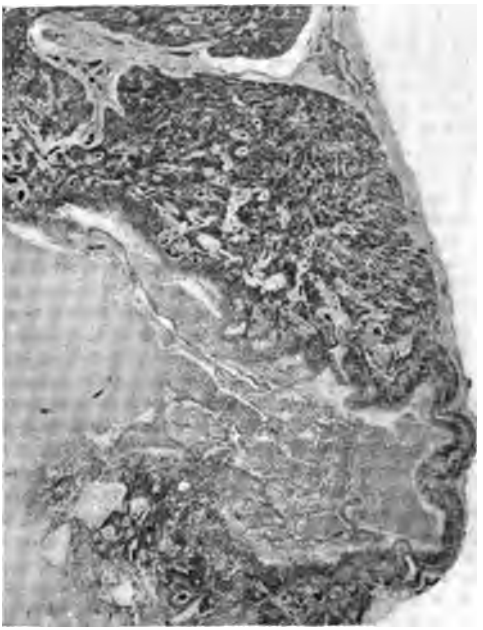


FIG. 2.



FIG. 3.

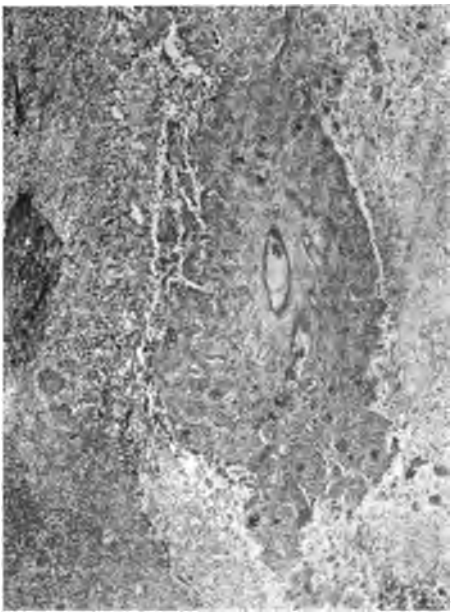


FIG. 4.

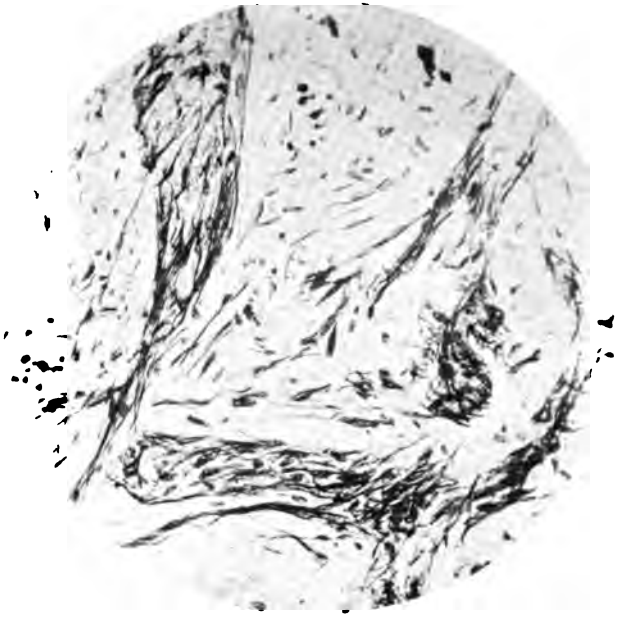


FIG. 5.



FIG. 6.

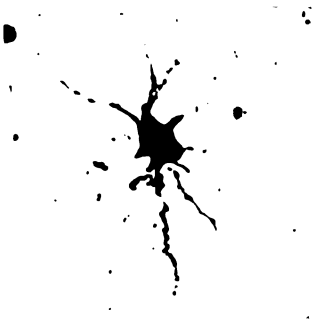


FIG. 7.



FIG. 8.

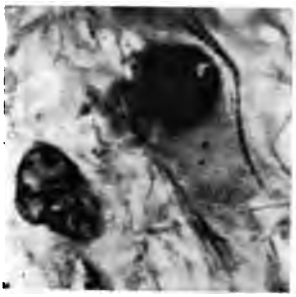


FIG. 9.



FIG. 11.



FIG. 10.



FIG. 12.

THE MENTAL DISTURBANCES OF ALCOHOLIC NEURITIS.[1]

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In descriptions of the mental states that underlie or accompany alcoholic neuritis, with the exception of the symptom-complex, known as Korsakow's disease, we meet with only such vague terms as delirium, stupor, confusion or dementia. Outside of the work of Wernicke and Bonhœffer, this looseness of symptomologic terms pervades the literature and we are forced to draw our own conclusions on the meaning of these and their relation to the personal factor of the writer. It is found in Gudden, Déjérine, Marinesco, Soukhanoff and Jelliffe, and even the recent excellent work of Cole is not exempt from this poverty of clinical description. Minute accounts of the anatomical findings in the central and peripheral nervous symptom are plentiful, but with the exception of the psychosis occurring in the course of a central neuritis as described by Adolf Meyer, the details of the mental disturbances of alcoholic neuritis are very meagre. From a study of the clinical material here presented and from a careful review of the available literature, I feel that the time has come when we must emancipate ourselves from such nebulous generalizations and base our mental pictures of alcoholic neuritis on sound clinical studies. Jolly found that one-third of his sixty cases of multiple neuritis did not present any psychical disturbance. Ballet divides the psychic syndromes of polyneuritis into three groups—first a delirious form, like the délire onirique of Régis; second, a confused form, usually of long duration and ending in mental enfeeblement; third, an amnesic form. Raymond also gives three

[1] Read before the New England Psychological Society, Worcester, Mass., October 24, 1905.

divisions, but states that in addition any one of these forms may often be combined. His classification is: 1. Delusional. 2. Psychic enfeeblement. 3. Amnesic. This amnesic form of Raymond and Ballet probably corresponds to Korsakow's disease. In addition, Cole states that a mental disorder of the type of an acute hallucinatory delirium is characteristic for alcoholic cases presenting a neuritic condition, but the clinical records of our cases will go far to disprove this and show that alcoholic neuritis may be accompanied by a multiplicity of psychic states. In this paper it is proposed to deal with those psychic disturbances of alcoholic neuritis other than Korsakow's complex, in an endeavor to establish the claim that other mental states may accompany a multiple degenerative neuritis.

Recent observations have shown that the symptom-complex described by the Russian psychiatrist may occur in other states, both alcoholic and non-alcoholic and both with and without a peripheral neuritis, although of course cortical changes must underlie the mental disorder, probably of the nature of a central neuritis, but without any recognizable peripheral affection. Or the central change may involve the eye muscle nuclei, and thus take on a picture of an acute polioencephalitis. As Spielmeyer speaks of a triad of symptoms in this latter disease, *i. e.*, the rapid ocular palsies, the severe involvement of the sensorium and the ataxia of gait and speech, so Bonhœffer in a recent paper shows that in the closely related Korsakow's psychosis, there are four cardinal symptoms,—extremely poor retention, defective memory for the recent past, disorientation and confabulation. The relation to delirium tremens is very close, in fact, cases of delirium tremens may show confabulation with neuritic signs, as well as the ocular palsies of an acute polioencephalitis, and this latter in addition may have an engrafted amnesic syndrome. Korsakow's complex may occur outside of the alcoholic cases; in acute infectious diseases, in senile and arterio-sclerotic conditions, following injury to head, in general paralysis, brain tumor, strangulation, in poisoning by carbonic acid gas, brain syphilis, acute melancholia with anthrax infection and in lead intoxication. Cole, Jolly and Bonhœffer have shown that Korsakow's disease stands in a very close relationship to delirium tremens, of which it represents a

more severe and protracted form. Delirium tremens may show transitory neuritic symptoms, also fabrications, suggestibility and amnesia, the latter occasionally of the retrograde variety. According to Carrier, it is a general disease of the nervous system, an acute toxic parenchymatous neuro-myelœncephalitis, in which the violent and disordered over-activity of the nerve elements, produced by a toxic cause, leads to their complete functional exhaustion. Wernicke has also shown the close relationship of the polyneuritic psychosis to delirium tremens, both presenting a marked allopsychic disorientation as a symptom of defect. Chloroform, ether or belladonna intoxication, meningitis, acute presbyophrenia, any stage of general paralysis may resemble delirium tremens. The relation to general paralysis is manifested clinically by the projection system being affected, and therefore there is tremor of the muscles, speech defect, awkwardness of motility, frequent facial pareses, etc. Korsakow's psychosis is a combined cortical and peripheral disease, the former explaining the mental state, the latter the peripheral symptoms. The former may exist without the latter, thus postulating the existence of cortical cell changes, but a peripheral neuritis of alcoholic origin is seldom found without the co-existence of some psychosis. On the contrary, there may be a neuritis of pre-eminently central distribution, with almost diagnostic motor disorders. The peculiar mental state of all these conditions is due to an interference with the cortical association fibres, while the disorientation depends upon the lack of peripheral sensations, a theory that has also been brought forward by Storch and Fœrster to explain these peculiar feelings of unreality, as opposed to Janet's hypothesis of an interference with the psychological tension.

It would be well to review some of the more recent literature which has a direct bearing on our cases and in this way arrive at a clearer conception of the varying mental symptoms and their accompanying physical states. Kræpelin in the last edition of his text book, divides the abnormal mental manifestations of alcoholic intoxication into acute and chronic alcoholism, delirium tremens, Korsakow's psychosis (chronic delirium), acute hallucinosis, pseudo-paralysis, and the various paranoic states. To Bonhœffer, however, belongs the credit of the most careful clinical

study of the acute alcoholic psychoses that the literature affords. His classification, although not final in any of its entities, furnishes an admirable working basis. He divides the psychoses into —a. Delirium tremens (typical and atypical forms). b. Chronic delirium (Korsakow's disease). c. Acute hallucinosis. d. Temporary mental disturbances of chronic alcoholics. He observes in cases of delirium tremens, that neuritic symptoms, such as tenderness of the nerves on pressure, anæsthesia of the feet, formication, and anæsthetic zones on the legs are often observed, while prominent peripheral motor paralysis is seen in isolated cases. The deliria which have their onset without the complication of a severe acute somatic disease, seem to be more often accompanied by neuritic symptoms. Nothing is said, however, of the fact, as observed in our series of cases, that whenever these neuritic disturbances are present, fabrications and suggestibility with a poor capacity for retaining recent impressions are always found, thus showing the close relationship between delirium tremens and Korsakow's psychosis. Indeed, where a moderate grade of neuritis is found in connection with a fabricating delirium tremens, the clinical picture may not be inaptly termed an acute Korsakow's psychosis, in contradistinction to the chronic delirium. Concerning the close relationship of acute superior poliœncephalitis to ordinary delirium tremens and Korsakow's disease, Bonhœffer, in discussing the variations from the typical picture of delirium tremens, points out the not infrequent eye muscle disturbances, in one case a weakness of the right abducens, in another a ptosis appearing on the third day and distinctly present up to the 14th day of the delirium. Two of our own cases had an eye muscle paralysis, in another there was an almost complete ophthalmoplegia with a rapid involvement of the sensorium resulting in a profound delirium. In the nineteen reported cases of this disease, all the patients were heavy drinkers, except in Wernicke's first case, in whom the symptom-complex followed sulphuric acid poisoning. Gudden has pointed out how in alcoholic neuritis there may be more or less prominent signs of encephalitis in the region of the brain stem, especially in the neighborhood of the third ventricle, in some cases with, in others without, involvement of the eye muscles. Muravieff and Bœdecker have also reported

cases of acute superior hemorrhagic poliœncephalitis, in Wernicke's sense, in combination with a Korsakow's complex of alcoholic origin, while other studies by Elzholz and Raimann have gone far to prove the anatomical and clinical unity of the two processes. Bonhœffer further points out how an acute hallucinosis may be associated with neuritic symptoms; pain on pressure over the calves and muscles and various paræsthesias. He also shows how in severe cases of delirium tremens there can be shown a widely spread degenerative process that involves the cerebrum diffusely and in which occasionally the central convolutions are strongly involved. The cerebellum also shows marked degenerative changes; the central gray matter is a place of predilection for hemorrhagic infiltrations, an expression of the relation of delirium tremens to poliœncephalitis hemorrhagica which can also be shown clinically. These cerebellar changes are of interest in connection with the loss of orientation of the body in space (allopsychical disorientation), which is so prominent as to be almost pathognomonic of delirium tremens. Furthermore, if one remembers the connections of the vestibular nerve with the cerebellum, we have an explanation of the recently reported cases of so-called vestibular ataxia, in which there seems to be a disease of the semi-circular canals, either in the nerve endings or in the endolymph. As this condition is accompanied by awkwardness of complicated movements and sometimes delirium with marked disorientation, the analogy is closer than would appear at first sight. Both Heilbronner and Cole have shown that in alcoholic polyneuritis, there is an axonal reaction of the cells of Clark's column with a degeneration of the direct cerebellar tract, a change which Marchi has pointed out as following total ablation of the cerebellum in monkeys. In one of Bonhœffer's cases of delirium tremens with absent knee jerks, painful muscles and restriction of the eye movements, this cerebellar change was well marked.

Cole has shown the close relationship between the central and peripheral changes in alcoholic neuritis and his three cases form an admirable illustration of the systemic character of the affection. The selective nature of the toxic process is important, for to-day we no longer look upon the alcoholic deliria as an exacerbation

of chronic alcoholism, but it is rather a general auto-intoxication, brought about by the lowering of the body resistance through alcohol, but probably not identical with the alcohol poison. As to the nature and production of this toxine we are in the dark. But that there is an infection or toxæmia is shown by the widespread nature of the disorder; in the nervous system, the central and peripheral neuritis; in the cardio-vascular system, the bradycardia, and dicrotic pulse; in the renal system, the presence of casts, albumose, albumen and acetone in the urine, the latter frequently running parallel with the course of the delirium; in the respiratory tract, the frequent and severe pneumonias; and in addition one may add the occasional hyperpyrexias, remissions in the disease (re-infection from auto-toxic products?) polyclonic disorders and epileptiform seizures. Mere alcohol poisoning is insufficient to cause this manifold symptomatology, the etiology is a more complex one, of which alcohol is merely a debilitating factor. The psychological or physiological expression of experimental alcohol poisoning in man, has shown nothing which in any way resembles these disorders, that is, as the isolated effect of measured doses of alcohol, and furthermore, the majority of the acute and chronic alcoholic psychoses, of whatever type, shows that the mental disturbance does not follow directly the ingestion of alcohol, but a sufficient period has elapsed for its complete elimination from the body. From the pathological standpoint, Berkley, in experimental acute and chronic alcohol poisoning in rabbits, was unable to detect cell changes in the central nervous system, which in any way resembled those found in the various alcoholic psychoses, either with or without neuritic signs, even when the animals had developed a prominent motor weakness.

The cholin found in the blood, peripheral nerves and cerebrospinal fluid in these cases has no etiological significance, but is merely a secondary expression of the myeline degeneration, an autolytic decomposition product of the lecithin of the myelin sheaths. In the alcoholic psychoses I have found cholin in the depressive hallucinoses with an exitus in central neuritis, in delirious states with peripheral neuritis, and in delirium tremens with marked tremor and jactitation, while cholin was absent in protracted delirious states and in depressions with extreme ema-

ciation, without either a clinical or an anatomical evidence of a central neuritis. There is little doubt, however, that if the blood or cerebro-spinal fluid of the reported cases of delirium tremens with twitchings and an axonal cell reaction, had been examined for cholin, the alkaloid would have been detected, thus postulating a neuritis of central origin.

Tiling, in a paper on alcoholic multiple neuritis has shown that the sensory disturbances are not confined to the affected extremities and other partially paretic portions of the body, but are found also over the face and those portions where there are no motor disturbances. The distribution of the analgesia is not alone in the course of the affected nerves. Frequently the appearance of pain is very late. In alcoholic paralysis there is usually a psychosis in the form of an amnesia, which becomes more severe with the exacerbations of the neuritis. Confusion may also be present but both the confusion and the amnesia disappear as the disease becomes milder. There do not appear to be disturbances of association, however, as the patient associates and combines past experiences well, but shows many gaps in the memory. In the highest grades of amnesia, there is aphasia and agraphia. This latter I saw exquisitely marked in the course of a delirium tremens, without neuritis or amnesia, but in which there existed a well marked reduplicative paramnesia.

Of the following cases, the first was particularly severe in its course. The delirious state was profound and the eye muscle paralysis, in spite of the peripheral neuritic symptoms, was in all probability of central origin, the proof being the co-existence of the motor picture of a central neuritis. It closely resembles many of the published cases of acute superior poliœncephalitis. Unfortunately an autopsy could not be obtained. There was a severe involvement of the central and peripheral nervous system and the eye muscle symptoms must also be looked upon as of central origin, in spite of the statement of Oppenheim, that an ophthalmoplegia with peripheral neuritis is likewise of peripheral origin. The hematoporphyrinuria was merely symptomatic. The allopsychic disorientation was extreme throughout the entire course of the disease and although the diagnosis was delirium tremens,

yet there were many features of an extreme agitation and much restlessness, probably hallucinatory in origin. The terminal motor symptoms were characteristic of central neuritis.

CASE I.

Delirium Tremens of very Acute Onset, with Peripheral and Central Neuritis, Hematoporphyrinuria, Deep Confusion, Rapid Muscular Atrophy, Twitchings and Rigidity of Limbs, a Complex Resembling Acute Superior Polioencephalitis (Wernicke). Exitus in Central Neuritis. No Autopsy.

J. M., aged 55, laborer, was admitted to the Worcester Insane Hospital, May 19, 1904. The family history was negative. He had a common school education, and was married in 1875, but there were no children. He was a hard worker and previous to his admission to the hospital, he appeared greatly run down. It was stated that he drank only an occasional bottle of beer, but the subsequent course of the mental disease showed that the alcoholic history was considerably minimized. On May 15, 1904, he became irritated over some trivial family news and insisted that people were persecuting him. That night he lay awake and the next day remained in bed, quite weak and restless. The restlessness was soon succeeded by violence, he showed fear, said he was being pursued by a multitude of men, etc. His increasing violence led to his commitment to the hospital. On admission he was restless, glaring and staring about the room, was very tremulous and frequently repeated, "No one came in here to assist me. I was running around with snakes and all sorts of things." Occasionally he would refuse to reply to a question, but gazed about in a terrified manner, claiming to see "bats and weazels."

May 21.—Awake and restless all night. Where are you? "Where was I this morning? I am dead or drugged or bluffed. I am crazy." From what? "Wake and sleep and rest and kissing. Take it away, he says. Where there is life there is hope." (Gazing at the ceiling.) What do you see? "Nothing." What do you hear? "I hear bands playing and music. There is war or trouble ahead. I am here for two weeks, coming up and going around. Eagles are flying and fishes are flying. I'll have to go up and come down. North, south, east, west." He begins to pray, meanwhile gazing in a steady, rapt manner at the ceiling, frequently folding his hands and kissing them, and then suddenly says, as if in reaction to auditory hallucinations, "Yes, it's pretty tough." What place is this? "A place of fools and robbers." What city is this? "Worcester." What day of the week is this? He again turns to the wall, whispering, "I don't know who you are. Leave this door in the back by the back where it goes." What month? "Let me see this paper and I'll draw you in writing. There is other people talking around here besides me. Are you my uncle? Are you going to kill or shoot me?" What do you hear? "I hear a light." Do you hear voices? "Voices, blessings, I hear people blessing me. All the people here are dead, but they are

talking now." He scowls, then makes blowing noises, cries and rubs his hands, and then says, "Clean up and get out and go off." Why do you do that? "I am a drum or a lord or an animal or a wolf. Go on, what do you want here? You old bull! These puzzles here are the prominent people I know of." There is no fever. The tongue is slightly tremulous and coated.

May 24.—The sleep has improved, but he is still confused, restless and frequently talks out of the window. When asked where he is, he stares ahead in a dreamy manner, and after some hesitation, replies: "It looks like mountains or woods." What building is this? "What is a divine fold? God, white mountains—a green mane and a gold fight. I went down to a mountain or a jungle. Is the rattlesnake here or the bamboo?"

May 27.—The patient is unable to walk, complains of pain in the legs, and the calves and popliteal spaces are very tender to pressure. Knee jerks diminished.

May 28.—Remains quite restless, is deeply confused. Speaks but little spontaneously, occasionally groans and glances in a wild manner from side to side, will suddenly turn around and point to imaginary objects on the wall, or will spend hours picking at the sheets. He is completely disoriented, says he is in "Heaven or hell," or "This is spring, the eighth day of the week."

Physical Examination.—Tongue dry and heavily coated. The right leg is 3 cm. smaller than the left in all its portions, and the muscles appear more flabby. There is extreme tenderness in the calves and popliteal spaces. The pupils are small, but equal, and react promptly to light and accommodation. Extreme hyperæsthesia in both legs. The feet are cold. The pain and temperature senses are not impaired, but there is complete anæsthesia to light and touch over both legs below the knees. Knee jerks very slight on both sides. Elbow and wrist reflexes absent. Achilles absent. Plantar reflex normal. Complete loss of control of sphincters. Unable to walk or stand alone, complaining of considerable spontaneous pain in both legs. The flexors and extensors of the toes are quite weak. He speaks in a husky voice; there is no other speech defect. Heart sounds rapid and weak. Lungs and abdomen negative. The urine shows a faint trace of albumen and contains numerous hyalin and granular casts.

May 30.—He continues extremely restless and frequently covers the eyes, as if in protection from terrifying visual hallucinations. He is completely disoriented and the neuritic symptoms persist. What city is this? "Dublin." What month? "January." On account of the insomnia, there is ordered veronal grs. X. at bed time.

June 1.—Knee jerks very slight and easily exhausted. There is marked tenderness in both calves and the patient is unable to walk alone. He is confused, restless, picking at the bed clothes; the tongue is dry and parched, the productions confused and disoriented. For the next few days he continued in the same condition. On June 7, he was found lying with the eyes half closed, picking at the bed clothes and moving

restlessly from side to side. Temperature 100. There is a slight harsh metallic cough. He is unable to walk and winces with pain when slight pressure is made on the calves. The lips are dry, the teeth covered with sordes, the tongue is heavily coated and he is able to protrude only the tip of it. There is tremor of both arms on attempts at voluntary motion, the tremor being especially marked on the left. The legs and hands are cold and cyanotic. There is a fine tremor of the head, the left eyelid droops, the left forearm muscles show occasional slight twitching and there is considerable rigidity in the elbows, shoulders and head. At every effort on moving the bed clothes, the patient groans slightly and the arms and head show a fine rhythmical tremor, combined with slight twitching of the former. The pupils are equal and react. The knee jerks are much diminished. Double Babinski reflex, more marked on the left. Achilles absent. No ankle clonus. Extreme pain and tenderness over both calves. Tremor of both legs with occasional twitching of thigh muscles. The reaction to questions is quite fragmentary, consisting of either a few disconnected words or unintelligible mumbling. In the evening, he appeared rather weaker, the eyes were wide open, the eyeballs immobile and the stare fixed and glassy. In turning to look at an object he turned the entire head, instead of moving the eyeballs. Slight tremor of both forearms. The tremor of the head has disappeared, but he continually and slowly moves it from side to side. The biceps muscle is quite flabby and extremely tender to pressure. Epithenars of both sides flabby and flat. Calf muscles flabby and tender. The extensors of the feet and toes are very weak.

June 8.—Temperature 103.8, pulse rapid, weak and irregular, respiration varies from 52 to 60. There is considerable cyanosis of the face and hands, and saliva is flowing from the corners of the mouth. He lies in bed with the legs half curled up, cyanotic, almost totally unconscious, ptosis of left eyelid. The breath sounds are roughened over the right and left sides of the chest, with the exception of an area on the right just outside the nipple line, where there is a distinct to and fro rasping sound. Some dullness at right apex, numerous crepitant rales over the back.

Urine.—Reaction acid, specific gravity 1028, albumen, large trace, albumose, acetone and aceto acid are absent, sugar absent, indican diminished, color dark reddish amber, hematoporphyrin present in a large trace, sediment, large number of hyalin and finely granular casts.

The patient died at 1.55 p. m. No autopsy could be obtained.

In the following three cases, the symptoms of a peripheral neuritis were manifest as an eye muscle palsy, associated either with general epileptiform seizures of alcoholic origin, a profound central disorder running a rather acute course and resembling Korsakow's disease, or a more protracted fabricating delirium with rapid loss of the knee jerks. In Case II, the fabricating

complex was typical, showing an involvement of the higher cortical centers in a central disturbance, associated with a unilateral oculo-motor neuritis. There was a parallel improvement of the mental symptoms and the eye muscle palsy. In Case III, there existed a state of hallucinatory confusion, with epileptiform seizures of so marked a character that the early diagnosis was made of general paralysis, but the rapid recovery parallel with the disappearance of the seizures and the eye muscle palsy, soon established the non-paralytic nature of the disease. Case IV bore a strong resemblance to Case II except that the onset was typical of delirium tremens, but there was a rapid transition into a polyneuritic mental disorder, again showing the close relationship between delirium tremens and Korsakow's disease.

CASE II.

Delirium of One Month's Duration, with Extensive Fabrications, Marked Memory Disorder and Deep Disorientation Resembling an Acute Korsakow's Complex. Ptosis and External Strabismus of Left Eye. No other Neuritic Symptoms. Disappearance of Eye Symptoms Parallel with the Recovery from Delirium. Amnesia for Deepest Period of Delirium.

P. D., aged 45, tinsmith, was brought to the Worcester Insane Hospital on June 26, 1902, having been found in an unconscious condition near a railroad. He was deeply confused and dazed. The anamnesis showed that a child of the patient died in convulsions; another child is living, but is completely paralyzed on the right side. The patient was a very heavy drinker. On June 14, he left home and was not again seen by his family until admitted to the hospital. At the time of his disappearance he had been drinking more heavily than usual, mostly whiskey and beer. On admission he was restless and resistive, frequently ran into things and on attempting to pick up an object, he would invariably reach to one side or under it. He was completely disoriented, said it was December 5 or 6, the memory was very defective and contradictory statements were frequently made.

June 26.—Quiet, but completely disoriented, memory very poor, marked disturbance of Merkfähigkeit (disorder of recording faculty). Calculation was very defective, as the patient was unable to remember a problem after starting it. He claimed he was in Hartford, and on being asked the month, replied "February."

June 27.—He complains of a constant, dull frontal headache and the scalp in this region is somewhat tender to percussion. In walking he constantly stumbles into objects, invariably goes to the left, and is unable to turn quickly without staggering. There is partial ptosis of the left

eyelid, when the left eyeball is at rest it rotates either fully outwards or upwards. There is no hemianopsia but a marked diplopia. Nothing definite is made out in the fundus of either eye on ophthalmoscopic examination. The pupils are unequal, the right being larger than the left. They are rigid to accommodation and react very slightly to light. No speech or writing defect. Knee jerks present, but exaggerated on the left. No ankle clonus or Babinski. No sensory disturbances, except a complaint of a "numb feeling" in the dorsal surface of the hands. There is a coarse tremor of the hands; the tongue has a fine tremor and goes decidedly to the right. Heart, lungs and urine show nothing abnormal.

June 28.—The patient still shows the effect of the diplopia in walking. He is completely disoriented, becomes lost on the ward, shows a marked memory disorder for both recent and remote happenings, he became greatly confused in dates and cannot place the chief occurrences of his life in time. There is no insight into the mental condition. There are extensive delirious fabrications, with prominent Merkfähigkeit disorder while the memory pictures are very defective. Suggestibility is marked. The patient gradually became clearer; on July 9 the strabismus was less marked and the diplopia had disappeared. From this date there was a rapid improvement, orientation returned, the memory was no longer defective except for an amnesic period dating from July 13. The memory for this period was never recovered. The strabismus disappeared parallel with the improvement in the mental condition and he was discharged August 29, 1902, recovered.

CASE III.

Acute Hallucinosis with Epileptiform Seizures and Transitory Internal Strabismus of Left Eye. No other Neuritic Symptoms. Recovery.

J. J., aged 33, was admitted to the Worcester Insane Hospital on July 24, 1903, on a certificate of excessive alcoholism, epileptic seizures, insomnia and auditory and visual hallucinations. He was quiet and oriented on admission, admitted hearing sounds like hissing, claimed men were after him in a balloon, that they ring bells to annoy him and that occasionally he sees snakes. He admits being intoxicated once a week for the last six months.

July 25.—The patient was found sitting on the edge of the bed and appeared quite confused. Suddenly the muscles of the lower jaw began to contract spasmodically, then the left hand became contracted and the thigh muscles of the same side twitched. This gradually spread over the entire left side. He did not lose consciousness, but on attempts to speak, he could make only a few guttural sounds.

July 26.—The patient had general epileptiform seizures during the night, about seven every hour and this morning he had five more within a space of twenty-five minutes.

July 27.—There were a number of convulsions during the night and in the morning there was a temperature of 104° F. He was much confused,

it being necessary to repeat a question several times before he was able to comprehend. Simple commands, however, he quickly understands and obeys them correctly. For a time he answered every question by "Head," then shortly afterwards by "P—P," and finally to "Pay, pay, pay," sticking to the latter. During the interview the patient had a convulsion. He screamed, opened his mouth to its full extent, turned his head forcibly to the left and then there were twitchings of both sides of the face and both legs. As he recovered from the seizure, the head and legs turned to the right, he picked at his left hand and then rubbed the right side of the face. Knee jerks brisk and equal. Babinski on the left, normal plantar reflex on the right. Several hours later a complete physical examination disclosed the following:

The patient is well developed and nourished and as he lies in bed the left foot is turned outward and he continually rubs the right parietal region. The head is turned to the left and he is in a semi-stuporous condition. He seems inclined to move the right arm and leg more than the left. There is no apparent tenderness of the scalp to percussion. No slurring in speech, but the language is of a peculiar paraphasic variety, with a sticking to one phrase or to meaningless combinations of syllables. After much urging he obeys commands, but pays no attention to simple objects when asked to name them. It is impossible to test the pupils on account of the mental condition and rather aimless resistiveness. The knee jerks are brisk and equal. Plantars normal but easily exhausted. The abdominals and cremasterics are very slight on the left and absent on the right. There is no motor paralysis anywhere. There is occasional twitching of the left side of the face, but no difference in the nasolabial folds. The heart, lungs and urine are negative. No signs of syphilis.

July 28.—The patient had seven fits last night and five this morning, the left side seemed more involved than the right. Immediately following one of the fits, the plantar reflex was brisk and normal on the right, but absent on the left.

July 29.—There were five fits last night. This morning the patient is bright and alert, speaking freely, although with some hesitation and stammering at first. He is well oriented for place, but not for time. There is a constant complaint of pain in the left parietal region but no tenderness in this area. There is an admitted history of excessive alcoholism but syphilis is absolutely denied. Tongue protruded in median without tremor. The left naso-labial fold appears deeper than the right, and the mouth is drawn a little to the left side. Babinski on the right, normal reflex on the left.

July 30.—Two fits yesterday and for the next two days he was quite confused and disoriented, but there was no evidence of hallucinations or fabrications.

August 6.—The patient has shown a great improvement. He admits a former affect of fear, claims to have heard crying and buzzing, saw colored lights, bats, birds, etc. During the delirious period "a man compelled me to think as he wished, I have these spells every time I drink."

Pupils equal and react promptly to light and accommodation. He complains of the left arm being weak. There is no impairment of the stereognostic sense. Plantars normal. No sensory disturbances. No writing or speech defect. No tremor anywhere. There is a slight internal squint of the left eye with diplopia. The false image is seen about one inch inside the true one and about one inch above. As the candle is carried to the left it separates. No tenderness in calves. The eye symptoms disappeared on August 18 and the patient was discharged on September 10, 1903, as recovered.

CASE IV.

Delirium Tremens with Epileptiform Seizures Going into a Fabricating Delirium with Diplopia and Polyneuritis. Marked Improvement.

J. M., aged 35, laborer, was admitted to the Worcester Insane Hospital on September 1, 1902. There is a history of moderate alcoholism in many members of the family. The patient was always considered a "black sheep" was a truant at school and unsteady in his work. He has been a steady drinker since 16 years of age, and went on frequent sprees. In 1886 he contracted syphilis. In the summer of 1897 after a two weeks' spree he developed delirium tremens, lasting only for one night. In August, 1898, he went on another protracted spree, following a six weeks' complete abstinence from liquor. Insomnia and gastric disturbances developed, and finally multiple visual hallucinations; he saw animals, 100 men came up in different forms, dancing girls, a gigantic head with a mouth expanding several yards, etc. He was committed to this hospital on August 28, 1898, in a state of tremor and excitement. Knee jerks brisk, tremor of hands, urine contains a trace of albumen. Discharged October 17, 1898, as recovered. Since then, the patient has worked at odd jobs and has loafed considerably about saloons, drinking every day. On August 30, 1902, gastric disturbances developed, with a marked general tremor and great affect of fear. He saw imaginary persons and claimed that there were rocks in his head. On admission to the hospital he was very tremulous, had difficulty in walking, complained of his head and eyes, there was a marked tremor of the tongue, fibrillary twitchings of the fingers and clonic spasms of the muscles of the calves and neck. Temperature 100° F. Diplopia.

September 2.—General epileptiform seizure. Distinct diplopia in the lower arc, the double images coming more closely together as the object is moved from right to left.

September 3.—The patient is less apprehensive, but still complains of seeing double. "Near objects look like little pigmies." Diplopia continues. Slightly disoriented for time.

September 4. Physical Examination.—Marked internal strabismus of right eye. Vision blurred at times. Diplopia of left lower field. Taste is impaired on the left side of the tongue. Smell is impaired in the left

nostril. There is a complaint of hot and cold sensations and of a feeling of formication. No nerve or muscle tenderness. Knee jerks equal and brisk. Considerable tremor of hands. Staggering gait. Considerable swaying in Romberg. The urine contains a large trace of albumen, many hyalin and granular casts and a few red blood corpuscles.

September 4.—He is completely disoriented and sees moving objects on the bed clothes. There is a marked restlessness and at times he goes into a deeper delirium. "I see visions all the time and I hear voices in all the tongues of the universe. Sometimes it seems as if I was riding a horse along leisurely and all of a sudden you are off like the wind. Then all at once you meet a lion and you are wrestling with the lion and then you are riding in a circus," etc.

September 5.—The patient continues to react to auditory and visual hallucinations and shows marked fear and complete disorientation. The urine is free from albumen.

September 6.—Fever, disorientation, marked fear and continually reacting to hallucinations.

September 8.—The sleep has shown a marked improvement, but the delirium with partial disorientation continues. He thinks the entire family are dead and fabricates along these lines. "I've a notion my sister died and I attended her funeral. I know my people are all dead. I'm the only one that is alive."

September 14.—The fabrications are more prominent with a greater mass of detail.

September 15.—Completely disoriented for time, place and person. The memory for recent impressions is very defective and he fills up the gap by fabrications. The memory pictures are good and the calculation fair. No disorder of apperception or asymbolia. The psychomotor restlessness is marked.

September 22.—Occasional nocturnal restlessness; the diplopia has disappeared. He complains of pain in the feet and ankles and there is some slight tenderness along these parts.

October 14.—The patient is quiet and orderly and sleeps well. He is oriented for place but not for time, not knowing the month. He is unable to retain recent impressions in his memory, but there are no fabrications. There is some insight into his previous condition.

Knee jerks absent. Some tenderness along nerve trunks and over calves of the legs. Tremor of tongue and hands. Gait normal, but the balance is quickly lost in turning quickly. The extensors of the toes are weak. Pupils equal and regular and show but little reaction to light. There is slight diminution of the pain sense in both legs below the knees. No muscular atrophy or reaction of degeneration.

For some time there was little change in the patient's mental condition, the memory remaining poor, but without fabrications. The knee jerks appeared but remained weak. On December 17, he was depressed and complained of dizziness. The nerve and muscle tenderness had disap-

peared but the tremor of the tongue and hands remained. He remained in bed for some time and appeared rather weak. He gradually improved and became more cheerful and industrious, but the memory always remained rather defective and the knee jerks slight. Discharged June 26, 1903, much improved.

The next three cases presented a fairly typical picture of delirium tremens. In Case V there existed a moderate grade of neuritis with absent knee jerks, the latter being re-established during the period of recovery. Interesting features in this case were the allopsychic disorientation and the fabrications, a Korsakow's syndrome of a very rapid course, associated with a transitory neuritis, and the protracted insomnia after the cessation of the hallucinations. In Case VI the facial paralysis was neuritic in nature but closely resembled the frequently seen paresis of general paralysis. It rapidly subsided with the recovery from the delirium. Case VII presented many perplexing features of diagnosis, on account of the tabetic complex (rigid pupils, absent knee jerks, pains, sensory disturbances, syphilitic history) but the reappearance of the lost reflexes established the neuritic basis of the disturbance and proved the parallel toxic origin of the delirium and the polyneuritis. Donath has recently shown, however, how in tabes even without hemiplegia the knee jerks may occasionally reappear, but these are certainly very atypical and abnormal forms of the disease and exceedingly rare, the literature affording but few examples (Hughlings Jackson, M. J. Taylor, Dercum, Westphal).

CASE V.

Delirium Tremens with Fabrications, Moderate Polyneuritis and Protracted Insomnia During Recovery.

E. D., aged 29, baker, was admitted to the Worcester Insane Hospital on April 24, 1903. Ever since his marriage six years previously, the patient had been a hard drinker, being intoxicated several times weekly. On April 22, he began to hear voices, claiming that someone was calling him. During the night, he ran away from home, and the next day he went to the police for protection, claiming that someone was after him to kill him. He was restless and tremulous on admission, but there was no fever. He was completely disoriented for time and place and reacted constantly to auditory hallucinations. He complained of pain in the legs and of "stiffness" in the arms. There is extreme tenderness in both popliteal spaces and in both calves and also along the line of the anterior

crural nerves. The hands and tongue are very tremulous. Both knee jerks are absent.

April 25.—Awake and restless all night. No fever. What kept you awake last night? "I was over to some friends across the bridge and having a good time with the rest of them. I had a couple of glasses of beer." What are you doing this morning? "Sleeping." When did you come here? "A week ago last Monday." What place is this? "City Hospital." What is the date? "May 7." Why are you here? "Doctored because I am shaky." The tongue is very tremulous. The pain and tenderness along the nerve trunks persist. The knee jerks, elbow and wrist reflexes are absent. No extensor weakness of toes.

April 27.—Quieter, but still disoriented. The pain and the reflexes remain as previously.

April 29.—The hallucinations and fabrications have ceased.

April 30.—Rather marked tenderness of both popliteal spaces and calf muscles and along anterior crural nerve. No muscular atrophy. The radials, ulnars and sciatics are not involved. The pupils are equal and react promptly. No sensory disturbances. Knee jerks absent. Elbow and wrist reflexes slight on both sides. Achilles absent. Slight unsteadiness in Romberg's position. Tremor of lips, tongue and hands. The heart, lungs and urine are negative.

During the next week, although the patient was mentally clear, there was a persistent insomnia, which yielded only to hydrotherapy. The nerve and muscle tenderness disappeared, and the knee reflexes returned. He was discharged June 3, 1903, recovered.

CASE VI.

Delirium Tremens with Neuritic Pains, Diminished Knee Jerks and Transitory Facial Paralysis. Recovery.

J. M., aged 30, iron moulder, was admitted to the Worcester Insane Hospital on September 10, 1904. The patient was always healthy, but used liquor to excess and was frequently intoxicated. The day after admission to the hospital he suddenly became restless, sleepless, deeply confused and developed auditory and visual hallucinations. On admission there was marked tremor of the entire body, he was deeply disoriented and fabricated extensively when questioned. The next day the tremor continued in the same intensity, he claimed he saw a "minstrel troop" last night, went fishing, was arrested for debt, etc. He was unable to recall the length of time he had been in the hospital and addressed the physician as "bishop." Knee jerks almost absent. Marked tremor in the handwriting.

September 12.—Tenderness in arms, calves and soles of feet. Pupils equal and react promptly to light and accommodation. Knee jerks very slight and easily exhausted. Slight double ankle clonus. Moderate swaying in Romberg's position. No flexor or extensor weakness of the toes.

The right angle of the mouth is drawn a little upwards and the naso-labial folds are much flatter on the left. Tremor of hands and in the handwriting. The patient gradually improved, the delirium subsided, and parallel with this improvement the tremor and facial paralysis disappeared and the reflexes became normal. He was discharged recovered.

CASE VII.

Delirium Tremens with Moderate Polyneuritis (Neuro Tabes). Recovery.

T. F., aged 32, was admitted to the Worcester Insane Hospital on March 30, 1903. He had been drinking heavily and sought the protection of the police, claiming that a plot was being concocted to kill him for masturbating. On admission he was quiet but tremulous, but there was no fever. He was well oriented. Auditory hallucinations were marked; he heard voices threatening to kill him and in reaction thereto he manifested great fear. Tongue median with a coarse tremor. Marked tremor of the hands. Knee jerks slight on both sides. There was no nerve or muscle tenderness, but there is a complaint of a burning sensation on the soles of both feet.

March 31.—The patient slept well all night, but refused to eat in reaction to ideas of poisoning, probably on an hallucinatory basis.

April 1.—The temperature is 100.8. The patient is very restless and has a marked tremor of the entire body. He hears voices constantly repeating and answering his thoughts, and moving figures of changing shape appear before his eyes. The hands are very tremulous. In the evening, the fever and tremor had increased, crowds of women and children swarm upon him and voices continually repeat that he is to be killed.

April 2.—The patient is somewhat quieter, but the fear and the hallucinations of a terrifying nature remain.

April 3.—The temperature is normal and the tremor less marked, but the auditory hallucinations persist.

April 6.—The patient is much clearer mentally while the hallucinations are less prominent and seem to be disappearing.

Physical Examination.—Tibial crests smooth. No enlarged glands or nerve or muscle tenderness. The pupils are unequal and show scarcely any reaction to either light or accommodation. The naso-labial folds are more prominent on the right than the left. Tongue median with a slight retractile tremor. There is an occasional rapid jerk of the right arm as a whole. Grasps equal and strong. Slight fine tremor of the hands. No swaying in Romberg. Knee jerks and Achilles absent. No ankle clonus. No defect of speech or writing. Over the soles of both feet there is complete anæsthesia to touch, pain and temperature. No nerve or muscle tenderness. There is an admitted history of syphilis in 1895, without treatment. The stereognostic sense is not impaired. Héart, lungs and

urine negative. For the last two months he claims to have had lightning-like pains in both legs, and for nearly a year there have been periodic attacks of nausea and vomiting. Occasionally, he has wet and soiled the bed. There is a history of alcoholic excesses for a number of years, and he has had delirium tremens three times.

April 10.—The patient is mentally clear and has perfect insight.

April 15.—Knee jerks slight on both sides and easily exhausted. There is a spontaneous complain of sharp, transitory pains in the legs. No swaying in Romberg's position. No extensor weakness of the toes.

April 16.—The knee jerks remain the same and in addition, for the first time, there is tenderness over the calves to slight pressure, Achilles slight and sluggish. The physical status remained the same as detailed above, except that the tenderness disappeared and the reflexes became more brisk. He was discharged August 12, as recovered.

Cases VIII, IX, and X presented a marked depressive affect in connection with an active hallucinosis. Peripheral neuritis was absent, but the degenerative process involved the central neurones as shown by the mental state, the rapid physical decay and the terminal complex of rigidity and twitchings. These cases are very closely allied to the delirious and depressive disorders, as described by Adolf Meyer. To these may be added our Case I.

" Eight times in 200 autopsies in which a microscopic inspection of the cortex took place, a condition of bilateral change of the nature of the axonal reaction in practically all the Betz-cells was observed, accompanied by the same changes in other cell types and, where this was looked for, by decay of the medullary sheaths of some of the corresponding sets of files. . . . Instead of the long descriptive term, " partially systemic parenchymatous degeneration principally of the central nervous system," we propose the expression, " central neuritis " in the sense of an equivalent of parenchymatous neuritis, but mainly of central distribution. . . . Clinically, the symptoms are rather vague; after a course in which there is no suspicion of organic disorder there appears, more or less suddenly, difficulty of locomotion, increasing weakness for co-ordinated movements; at times jactitations of the limbs and rigidity and disorders of the reflexes, together with a diarrhea and occasional febrile fluctuations; the mental condition in this terminal episode is either that of anxious perplexed agitation, delirium or stupor, similar to a protracted delirium tremens."

The cholin found in two of our cases was merely a measure of the myelin degeneration. In another case, a careful examination of the urine both chemically and physiologically failed to disclose any toxic products, and in the absence of any definite toxæmic basis for this terminal process, I agree with Meyer that Edinger's "Ersatztheorie" may afford a satisfactory explanation of the genesis of these conditions. In certain debilitated states there results an unnatural strain in the nerve elements, and this factor is to be sought in the protracted alcoholism of our cases, lowering the resistance of the highly specialized tissue. This theory of Edinger has also been lately utilized by Schaffer to explain the pathogenesis and the occurrence of peculiar balloon-shaped swellings in the dendrites, found by him in a case of amaurotic family idiocy. Van Gehuchten, however, looks upon the chromatolytic cell changes as due to the suspension of the trophic action of the nerve cells on one another. The fact that this axonal cell change has been found in delirium tremens and in Korsakow's disease when of alcoholic origin, will explain the genesis of the mental disorder.

Outside of the equivocal cases of alcoholic central neuritis with the characteristic motor symptoms, this axonal Betz-cell change has been found in the following conditions—polyneuritic psychosis, facial paralysis, delirium tremens, katatonia following the course of an acute delirium, terminal states of involution melancholia, Landry's paralysis, in the vagus nucleus in diphtheria, dementia-præcox with emaciation, tetanus, typhoid fever, pellagra intoxication, phosphorus poisoning, fish poisoning, the so-called auto-intoxication psychoses (E. Meyer), amaurotic family idiocy, in confused and delirious states of a very rapid course, carcinoma and senile dementia. Many of these are independent disease states, in some there seems to be an overlapping of types, yet one sees in what diverse conditions similar cell changes may occur. Most of these present, however, in spite of diversity of terms, a few symptoms in common, delirium, restlessness, marked emaciation, physical deterioration, diarrhea, rigidity, twitchings or a rapid polyneuritis of a peripheral type. In the alcoholic cases it can be taken as a measure of the action of a hypothetical poison upon the central motor neurones and their axones, frequently

without any peripheral expression of neuritis as one understands the term, with the exception of the characteristic terminal motor disorders.

CASE VIII.

Alcoholic Depressive Hallucinosis with Marked Religious Affect, Rapid Emaciation and Physical Decay, Diarrhea, Central Neuritis. Death from Lobar Pneumonia. No Autopsy.

P. H., aged 42, laborer, was admitted to the Worcester Insane Hospital on January 16, 1905. The family history was negative. He was always strong and healthy, had a common school education, and was a hard worker. For several years he had used alcohol steadily and frequently to excess. About three weeks before Christmas, 1904, he stopped work and began to drink more heavily than usual. He developed delirium tremens and was sent to St. Vincent's Hospital on December 26, 1904. There he was in a stuporous state for two days, then became excited and dazed, kneeling in prayer most of the time. He was discharged apparently recovered on January 1, 1905, and remained at home the ensuing two weeks, but on January 13, he suddenly began to pray again, showed religious exaltation on a railroad track and finally was committed. On admission he was restless, depressed, praying, often removed his shoes, showed extreme facial tension and marked depressive affect. On close questioning, he admitted recent alcoholic excesses, followed by nocturnal delirious episodes with visual hallucinations and great fear. He became worried, depressed, felt weak, was unable to sleep, became more religious because he imagined he was to be punished for past sins and in reaction to these ideas, he frequently went to confession. The productions were of an exalted and intense religious nature. "I was scared through the night. I saw people in my room gathered all around me—women, men and children like shadows. Then I became nervous and frightened, and I couldn't sleep and I prayed to the Almighty God and Blessed Mother to protect me through the night from all danger, sickness and troubles, and that the Almighty God and Blessed Mother would hear my prayer and protect me through the night—amen!"

January 17.—The patient attempted suicide last night by hanging. The depressive-religious state continues. He was always perfectly oriented.

January 20.—The restlessness has become more marked, he is greatly depressed and agitated, and prays continually. Hallucinations are prominent, he hears voices and sees shadowy images of men and women.

January 21.—Refusal of food on the basis of poisoning. The tongue and lips are dry and there is much religious exaltation. On account of continual refusal of food, artificial feeding has become necessary.

January 22.—Continually expectorating a yellowish, tenacious sputum, which is free from tubercle bacilli.

January 25.—The depressive affect continues. There is marked muscu-

lar resistance in the arms and neck. Temperature 100.4° F. He talks of seeing "snakes in human form," and claims the food is "doctored" with cream of tartar and white lead.

January 28.—Temperature 103.4° F. He takes liquid food voluntarily. The sleep has improved and he is less agitated and restless. There has been a loss of 16 lbs. in weight since admission. Marked muscular resistance everywhere. Slight infection of right wrist.

February 4.—Quieter, but shows active resistance if touched. He is artifically fed again. There is a continuance of the depressive affect with monotonous religious repetitions. Hands cold and cyanotic. Face thin, pinched and drawn. Tremor of both arms and twitching of all the fingers especially marked on the right. Knee jerks unequal, being more brisk on the right. Purple cyanotic patches all over the body. At times the right arm goes into a rhythmical clonus. No abdominal tenderness. There is a severe diarrhea and the fæces have a very foul odor. Pulse rapid and weak. Lips dry and parched. Tongue heavily coated and very tremulous, and on attempts at speaking there is a tremor of the lips. There is marked muscular resistance to passive motion at the elbows and shoulders. The infected area on the right wrist was opened and drained.

February 6.—There are no muscular twitchings, but the diarrhea persists. The voice is thick and the face drawn and pinched.

February 7.—The patient is delirious and almost moribund, he is weaker, the diarrhea persists and signs of lobar pneumonia have developed.

February 8.—The twitchings of the left arm and both legs became more intense and the patient died at 10.45 p. m. the next day. No autopsy.

CASE IX.

Depressive Hallucinosis. Suicidal Attempt. Marked Episodes of Fear. Emaciation, Rigidity and Twitchings. Death from Central Neuritis and Broncho Pneumonia. Autopsy. General Axonal Reaction.

W. M., aged 50, laborer, was admitted to the Worcester Insane Hospital, March 1, 1902. The patient's father was insane for six weeks before his death, as the result of three apoplectic shocks. The mother died of consumption. The patient's development was normal and he was always strong and healthy. Married in 1881. He has been a hard drinker for a number of years, and was frequently intoxicated, but has not used liquor since September, 1901. About February, 1902, he became nervous, restless and sleepless; he was operated on for hemorrhoids and then treated for "neurasthenia." He also complained of an indefinite pain in the rectum, for which no cause could be found. He became more uneasy, slept poorly at night and said his legs felt weak. One day he started for Washington, remained away a few days and suddenly returned, but gave no information concerning his actions. Once he said, "I can't sleep; I know what is coming." On February 22, he remained in bed until four o'clock in the afternoon, complaining of a headache. A little later in the day he went to the woods and cut his throat, remained in the woods for

two days and then went to the City Hospital. He expressed regret for his actions, but asserted that someone told him to attempt suicide. At the City Hospital there was found a lacerated wound of the neck, at the junction of the trachea and the cricoid cartilage. On February 28, he began to talk strangely, became sleepless and restless, said there was someone under the bed, that he was to be killed, would live only a few minutes, etc. These facts led to his commitment. He was quiet on admission, well oriented, and admitted suicidal intentions when he cut his throat, but claims he did it because he became "downhearted." At 4 p. m. on February 22, says he drank a pint of alcohol and cut his throat about two hours later. "It throwed me out of my head, I didn't know anything. My head felt as hard as a rock." He is rather confused on what followed.

March 3.—Patient was found lying quietly in bed, and when questioned, he sat up promptly, but appeared rather apprehensive. When did you come? "Last night. What is your business with me?" What do you think? "I don't know." Are you afraid? "I thought I ought to know what I am to be executed or punished for. There is times I don't know —I ain't in my head or know what I am doing for the last six weeks. It was this alcohol I drank. I ain't drank for two years—I am telling you the God's truth." How did you sleep last night? "I didn't sleep last night. There is no use of talking any more. I don't feel like talking. I know my doom." Were you afraid when you cut your throat? "I was afraid, I was afraid of the horrors."

At an interview later in the day, the patient was found sitting up in bed, agitated and fearful, at times swaying uneasily to and fro and kicking abstractedly at the bed clothes. In his reaction to questions he showed much perplexity and retardation. The orientation was good for place and person but impaired and confused for time. There was no memory disorder. The grasp on questions of education was poor. He is depressed and perplexed, and showing a marked affect of fear. About October, 1901, he began, he says, to feel weak, nervous and sleepless and unable to work. He has not used liquor for about two years, but a short time before admission he bought a pint of alcohol, drank it at once, became "all nerved up" and cut his throat, being "fairly driven to it." This episode was followed by a period of cloudy memory, but no true amnesia. He has only partial insight, claiming that if his mind is affected, it is because "the doom has come." At present he believes he is to be punished for past sins, and that peope are in pursuit of him. He has seen shadows, "darkness," flashes, and "something like squirrels skipping by me," and at times experiences sensations like needles sticking into his skin.

Physical Examination.—A slender, emaciated and anæmic middle-aged man. There is no tenderness along the nerve trunks, but he complains of some pain when the joints are firmly grasped. Granulating wound in front of larynx. He complains of frontal ache and also of stinging pains

in the stomach. The pupils react normally. There is a rather slow reaction everywhere to pin prick, but no anæsthetic areas can be detected. Localization poor. Disturbance of temperature sense on both legs. Knee jerks increased. Slight unsteadiness of tongue. Fine tremor of hands and fingers. Grips a little weakened on both sides. The heart, lungs, and abdomen are negative. The urine contains a few granular casts.

March 4.—The patient was awake and restless all night, but in the morning he had become considerably quieter. He was in a semi-delirious state, with defective orientation. Occasionally, he will elevate his head slightly from the pillow, glance about restlessly, then mumble something or say "Sh!" He claims that last night he saw "a parrot in the sky, only twenty times larger." "I feel a lightness in my head and when I look up much I see visions. Last night I saw the sky like raining and heard a little buzzing noise." What place is this? "This is Philadelphia, this ain't Massachusetts. I got to Philadelphia on a train. The ceiling looks kind of dark, darker than usual. When I look at it, it runs in all manner of visions, horses and animals and things."

March 6.—Still suspicious and apprehensive, hears voices swearing at him, talking of being scalded, banished, burned, etc.

During the next few days he seemed to improve a little and slept better, but on March 10, the old fear and apprehension returned, "birds in the trees whisper and swear at him." Where are you now? "I know where I will be pretty soon." Where? "Way down in the water."

Up to April 16, he made many vague references to his "doom," heard people say he was to be shot, etc.; restless at night, saw animals, was occasionally deeply confused.

April 16.—The patient is very unsteady on his legs, appears perceptibly weaker. On attempts to walk he occasionally falls; does not grasp questions readily and wanders about the ward in an aimless, confused manner.

April 20.—The patient is confused, disoriented, thinks he is in a hospital at Pittsfield, has no idea of time, mumbles a great deal, constantly hears voices and buzzings, shows great fear when approached and constantly says he is to be cut up. He lies in bed with eyes staring at the ceiling and there is much rigidity in the arms. Occasionally slight twitchings were noticed in the fingers and individual muscles of the forearms.

April 21.—The twitchings have become more prominent and are combined with jerkings of the arms, and some backward jerking of the head. There is considerable rigidity in all the limbs, but none in the neck. Knee jerks increased.

April 22.—The twitchings and rigidity have ceased, but the patient is in a constant motility, making passes as if brushing things from his hands and fingers, and then as if winding thread. Asked what he is doing, he replies, "Needles, glass needles." Urine negative, except for an increase of indican.

April 25.—Very restless, picking at the bed clothes and mumbling to

himself. The condition continued the same until about May 10, when he had several diarrhœal movements, and twitchings of the hands were again observed with considerable rigidity in the legs. He was unable to talk above a whisper.

May 12.—Lying in bed, moving hands in a peculiar occupation delirium, looking anxiously and fearfully about him and attempting to pick objects out of the air. Knee jerks equal and exaggerated. Achilles brisk. No ankle clonus. Double Babinski reflex.

May 13.—Restless, apprehensive, catching hold of the bed as if falling, scared expression. Temperature 101.4° F. Slight twitching of the right arm.

May 15.—The twitchings are more constant, involving the legs and arms. The expression is frightened and aimless.

May 16.—The temperature varies from 100.8° to 101° F. The patient is semi-stuporous, there is rigidity of the arms and legs to passive manipulation, and the twitching has become generalized. Dullness over the right lower lobe with crepitant rales. Death at 9.45 p. m. of broncho pneumonia. Autopsy eleven hours after death. (Dr. T. A. Hoch).

Anatomical Summary.—Much emaciation (loss of 24 lbs. in weight since admission). Sacral decubitus. Old adhesions over both lungs. Thickening of aortic and mitral valves. Broncho pneumonia. Brain weight, 1610 grms. Dura adherent along longitudinal fissure and over right frontal pole. Pia slightly hazy. The basal vessels are rigid and stand open. Fourth ventricle free from granulations.

Microscopical Examination.—(Nissl stain). *Brain*—axonal reaction of nearly all the cells in the paracentral lobules, frontal region and medulla.

Cord—Axonal reaction of anterior horn cells, the cells of Clarke's column, and of the posterior root ganglia.

There were no Marchi specimens. Cholin was found in the cerebrospinal fluid.

CASE X.

Depressive Hallucinosis with Episodic Expansive Ideas, Emaciation, Diarrhea, Rigidity and Twitchings. Death from Central Neuritis and Pulmonary Tuberculosis. Autopsy.

M. J. K., aged 67, laborer, was admitted to the Worcester Insane Hospital, July 21, 1902. The family history was negative. The patient has been a steady drinker all his life, but seldom became intoxicated. There is no history of delirium tremens. Since 1898, following "sunstroke," the patient has suffered from severe headaches, and for three or four months previous to commitment, failing memory was noticed. During the first week in July, he began to make silly remarks, easily became confused, said he was going to England in order to marry, etc. He wandered away from home and on being returned, was completely disoriented, said he had no children, failed to recognize his son, and accused the latter of trying to poison him.

On admission to the hospital there was slight fever and some œdema of the ankles, but the heart was negative. He was well oriented and gave a clear account of his journey to the hospital. He admitted former hallucinations of sight during the summer. "My room was full of women. They'd disappear when I'd open my eyes and appear when I closed them. My mind sometimes rambles around."

July 23, 1902.—Sudden outbursts of agitation with tremor of entire body, irritability and a shrinking negativism. When greeted he replies: "Why do you want to bother your God?" How long have you been God? "Ever since I came here. I had a little work to do in the other world, making suns, etc. I am God Almighty! There is no God but me!" (emphasis). "I am God, the only God there is above!" (elevating arms). "I don't take the place of some other God. I made myself and am the only God. I can go to heaven in about one-half a second." Later he was found gazing fixedly at the ceiling, constantly moaning and talking. "O my God, my God! My God of heaven! Oh, God—oh, God—oh, God—oh, hell—oh, hell! I am God and the true God. I have no punishment in hell! I'll never go to hell. I am my own hell." What house is this? "This is hell." What city is this? "Hell! Hell!" What month is it? "Month? Month? It's no month; no month for me." There is strong spring resistance of the arms.

July 24.—The patient shows partial insight into his condition of yesterday, but he appears weak and exhausted and residuals of the expansive religious ideas remain, but without agitation.

During the next few days he remained quiet and slept well.

July 29. Physical Examination.—Weak and anæmic. Complains of vertigo. Double complete arcus senilis. Pupils equal and react promptly to light and accommodation. Slight tremor of tongue and hands. Knee jerks and Achilles absent. No ankle clonus or Babinski. The arteries are moderately thickened. Heart, lungs and abdomen negative. The urine contains hyalin and granular casts, and a slight trace of albumen. For the next few days the patient produced rather disconnected talk and reacted to hallucinations, as the following sample of his production shows: "There are murderers and others in here. I hear false trials in here and there are two murderers in this room now. . . . If there is a fortune going to be left to me what good will it do me? Last Friday night the dream said some fellow out in California died five weeks ago and left four millions." Why were you brought here? "I thought I was going to hell and I wanted to go there to be killed right away. They all laughed at me and told me there were no devils here."

August 5.—The urine contains a trace of albumen, a few normal blood cells and hyalin and finely granular casts.

August 9.—The patient complains of vertigo and a feeling of pressure in the head. He is disoriented but denies any hallucinations at present.

August 20.—Refuses to answer questions and on pressing, he merely glances at the physician. During the month he lost 16 pounds in weight.

Repeated examinations of the urine still show casts and a trace of albumen.

September 12.—The patient is gradually becoming weaker and coughs considerably. The reaction varies from exhilaration to depression. Sputum free from tubercle bacilli.

September 17.—Attempts to drink his urine.

September 26.—The patient is very weak. There is some diarrhea. No rigidity. Knee jerks slight. Pupils react to light. Has lost 12 pounds since the first of the month. Up to September 30, there was occasional diarrhea with occasional restlessness and agitation.

September 30.—Very weak and unable to walk. Expression thin and pinched with an occasional look of terror. In the right axillary region, opposite the nipple line, and covering an area of about a hand's breadth, there is a to and fro friction rub with coarse, crepitant rales. Fine rales over right mid scapular region. No resistance at the elbows.

October 4.—Slight fever for two days. Groaning with marked agitated, depressive affect. Resistance at elbows. Slight explosive twitchings of right arm.

October 6.—Twitchings of both arms, more marked on the right, and almost constant jerkings of both legs.

October 7.—Delirious and disoriented. He speaks in a low tone. The eyes are sunken and the cheek bones prominent. Elbows red and chafed.

October 8.—At first during the day the patient was semi-stuporous, later he became restless, mumbling and groaning with a look of terror. Temperature 99.2° F. Pulse weak but regular. The head is turned to the left, with rigidity of the neck muscles. Constant twitchings of the arms and legs, more marked on the right. Knee jerks present, but exaggerated on the right. No Achilles or ankle clonus. Flexion of legs and thighs with marked rigidity and evidence of pain on pressure on passive movements of the limbs. The twitchings soon became continuous and the patient suddenly collapsed and died October 9, 1902. Autopsy one hour after death (Dr. T. A. Hoch).

Anatomical Summary.—Emaciation. Tuberculosis of both lungs. Caseation of bronchial glands. Injection of small intestine, but no ulcers. Brain weight, 1100 grms. Pia œdematous. Dura much thickened and strongly adherent. Convolutions atrophied as a whole.

Microscopical Examination.—The Nissl stain shows the axonal reaction in the frontal and paracentral regions, and in the anterior horn cells and spinal ganglia. Cholin found in the cerebro-spinal fluid.

The next two cases presented at first a picture of an acute hallucinosis. In case XI there was a moderate degree of neuritis with a delusional interpretation of the paresthesias, as is as frequently seen in alcoholics who complain of somatic sensations. Case XII is particularly valuable, as it shows in an admirable manner the relation of a fabricating delirium in Korsakow's

sense to a peripheral neuritis and the disappearance of the mental symptoms parallel with the physical improvement. As the entire clinical picture developed while the patient was under observation in the hospital, there was presented a very favorable opportunity for a close observation of the case.

CASE XI.

Alcoholic Hallucinosis with Moderate Neuritic Symptoms and Delusional Interpretation of the Same. Recovery.

G. Z., aged 36, laborer, was admitted to the Worcester Insane Hospital on October 21, 1902. He had been a steady drinker since the death of his wife in 1897 and was occasionally intoxicated. Five days before admission he suddenly became excited, said he was pursued by two men and a woman who were attempting to kill him with stones, pistols, and electricity. On admission he was quiet and well oriented for place but not for time. There were marked ideas of electrical influence. "It makes my stomach go. My knees and stomach and heart are swollen." He claimed to hear the noise of an "electrical machine" which was being "worked" on him, two men are trying to kill him in this manner and urine is thrown on his face from a glass arrangement. On October 25, he began to complain of soreness in the stomach, legs and soles of feet. There was no fever. He was well oriented, there was a spontaneous complaint of malaise, of pain in the calves, with tingling and formication.

Physical Examination.—Pupils equal and react promptly to light and accommodation. No disturbances of cutaneous sensation. Marked tremor of hands, none of the tongue. Marked swaying in Romberg's position. Complains of pain in the soles of the feet and the calves when walking. Achilles marked on the right, absent on the left. There is marked tenderness along the lines of the anterior crural nerves, in both popliteal spaces and over the calves. Over the soles of both feet he complains of "squeezing, pinching and something crawling." The heart, lungs, abdomen and urine are negative.

October 27.—He continues to complain of pain in the legs, ascribing it to "electricity." Tenderness over the median and ulnar nerves. Eye muscle movements unrestricted.

October 31.—Knee jerks diminished. The greater part of the nerve and muscle tenderness has disappeared, but there is still a feeling of formication, is more steady in Romberg's position.

November 2.—The pain along the radial and ulnar nerves is more intense. There is some weakness of the toes. The knee jerks are very rapidly exhausted.

November 11.—The knee jerks continue to be very slight. The tenderness of the arms persist. "Some machines are at the doors and some are in a board. I am full of bad stuff and burning all over." How do you

know this? "I hear them speak in the other room." Who speaks? "Three or four women and men." What do they say? "They say that some day all of my stomach will come down and I will piss for all my life." There is great fear and he frequently hides his face.

November 19.—Knee jerks very slight.

December 1.—Some general improvement in the neuritic pains.

January 10, 1903.—Complete disappearance of the paræstheias and of the nerve and muscle tenderness. Knee jerks diminished, but not easily exhausted. No swaying in Romberg's position.

February 19.—Although the auditory hallucinations and the feelings of electrical influence have completely disappeared, there is no insight into the condition. The knee jerks continue slight. He gradually showed increasing insight and was discharged March 25, 1903, recovered.

CASE XII.

Alcoholic Hallucinosis Going into a Fabricating Delirium with Prominent Neuritic Symptoms. Recovery.

C. E. B., aged 50, was committed to the Worcester Insane Hospital on June 6, 1905.

Family History.—A brother had alcoholic insanity, the father and maternal uncle was addicted to alcohol and the maternal grandmother died of hemiplegia.

Personal History.—The patient was a normal child, he had occasional severe nightmares. He was bright at school. He began to drink when 32 years of age, and since then he has used alcohol steadily, with occasional excesses. Of late years he has become somewhat distrustful of his brother and wife, but no true delusions developed. About Thanksgiving, 1904, he began to act peculiarly and since then he has been suspicious of everyone. It was also noticed that at this time he was drinking more heavily than usual. On June 4, he began to follow his brother's wife about the house and claimed to see his own wife in the room. He left home at 6.30 p. m. and nothing further was heard of his whereabouts until 4 a. m. the next day when he called at the police station and asked to be protected from those conspiring against him. He was thereupon committed. The next day, in an interview, he spoke only on urging, volunteered nothing and gave only a minimum of information. He was found lying in bed with the eyes tightly closed and on pressing of a question there were evidences of a subdued agitation with a fine tremor of the lower jaw. He appeared over-emotional and agitated and cried very easily. Orientation was modified by delusions, claiming, "This is a slaughter house." There were prominent auditory and visual hallucinations of a semi-delirious type, he heard people talk about him, saw imaginary persons "as in a dream," there were "peculiar feelings" in the head, "they have taken away all my furniture and left me all alone."

June 8.—The reaction is improved and he speaks more freely. He is

oriented and has insight into the former dreamy hallucinations, which he claims have ceased at present. There is a spontaneous complaint of a subjective feeling of "weakness and nervousness," "I'd get thinking spells and I imagined I could hear different things and I imagined I saw things. The night before last it was almost like a dream. I imagined I saw a brother of mine take my furniture away from the room here. I was in awful shape. I imagined my wife was going off to Fall River or somewhere."

June 9.—The patient was awake and noisy all last night. There were marked auditory hallucinations, heard his wife outside, and the furniture moved; once saw her through a closed transom, etc. There were no neuritic symptoms, fabrications or disorder of memory. The knee jerks were present and brisk. No tremor of hands, slight of tongue.

June 10.—The patient was again restless and sleepless last night. He showed great fear, and produced almost endless, dreamy fabrications. He complained of a "trembling" of the body, and was completely disoriented. There was a moderate Merkfähigkeit disturbance. No disturbance of attention. Claims that he was out all night, half dressed, walked around, went home, everything went wrong, seemed peculiar and twisted, etc. "I was restless and walked off and was thrown out of the house. When I woke up I was side of the road, without hat and in my shirt tail. I must have got an awful cold sitting on that stone in my shirt tail." What time is it now? About 12?" (9.30 a. m.) How long have you been here? "It must be four hours." What place is this? "Shrewsbury." There is a tremor of the body and a constant fine lateral tremor of the head. At times there is jerking of both arms and twitching of the thigh muscles. No paraphasia. Slight tremor in the handwriting. The tongue is median, but has a coarse tremor. The muscles are of good tone. He complains of a dull headache, of sharp pain in the thighs and calves and numbness of the feet and hands. There is marked tenderness in the calves, thighs, popliteal spaces, Scarpa's triangle, biceps muscles and of the median, radial, and ulnar nerves. There is diminished sensation to light touch on the dorsal surfaces of both feet, and thermo-anæsthesia of the soles. The pupils are equal and react to light and accommodation. The knee jerks are brisk and equal. Achilles slight and easily exhausted. Plantars normal on the right, typical Babinski on the left. Oppenheim's reflex absent. There is extreme tremor of both hands. The right side of the face seems a little flabby. The heart, lungs, abdomen and urine are negative.

June 11.—The patient was continually restless during the night. In the morning, he was completely disoriented, showed a very defective memory for both remote events and recent impressions, the inner associations are quite narrow. He constantly hears voices of a very threatening character. There is an almost endless variety of florid, dreamy fabrications, he went out West to Central Falls, then home, there was a consultation of physicians, he was operated on for appendicitis, etc. The

twitchings have disappeared, but the tenderness of the muscles and the nerve trunks continues the same.

June 12.—The same fabrications continue and the recent memory is much impaired. Orientation has improved, but the auditory hallucinations continue.

June 13.—The patient is quiet, speaks freely, the fabrications and hallucinations have disappeared, also the neuritic pains. He is oriented and there is perfect insight.

June 15.—Quiet and mentally clear. Discharged June 28, 1905, recovered.

Case XIII was one of a deep, confused delirium with a severe grade of polyneuritis, of which alcohol was undoubtedly the factor, although an auto-toxic origin was at first suspected because of an early diagnosis of acute yellow atrophy of the liver. The latter diagnosis was not, however, borne out by the clinical course of the disease, while the urinary findings were negative.

CASE XIII.

Delirium with Marked Confusion and Polyneuritis. Death. No Autopsy.

M. V., aged 46, housewife, was admitted to the Worcester Insane Hospital on May 12, 1904. She had a very limited education, was married when young and gave birth to twelve healthy children. It is stated that she used wine occasionally, but the information on this point was minimized and purposely misrepresented. On March 9, 1904, she entered St. Vincent's Hospital for nausea and vomiting, with a history of having suffered from "cramps" in the arms and legs for several months. At the hospital, the vomiting persisted for a week but without hematemesis. The eyes were normal. She was restless and excitable and there were hallucinations of sight and hearing. Four weeks after admission, the urine was found to contain albumen, bile, leucin and tyrosin (?), and a diagnosis was therefore made of acute yellow atrophy of the liver.

On admission to the Worcester Insane Hospital, she was restless, crying, at one time staring in a glassy manner, at another laughing. She claimed to have seen the physician before and was otherwise completely disoriented. The tongue was coated, the pupils react, the knee jerks absent and the plantars very slight.

May 26.—The digits of both hands are flexed over the metacarpophalangeal articulation. Knee jerks absent. Tenderness over both calves.

May 28.—The patient is much agitated, shows great fear, claiming fish are about to devour her as she lies in bed. At times she will scream in reaction to these terrifying hallucinations. The memory for remote events is greatly impaired.

June 6. Physical Examination.—The patient lies in bed with the legs drawn up toward the abdomen, there is a partial wrist drop on both sides

and the grasps are quite weak. The little and ring fingers on each side cannot be extended. There is also a moderate foot drop. There is no muscular atrophy anywhere and the patient appears well nourished. Pupils equal and react promptly to light and accommodation. The knee jerks are absent. The plantar reflex is very feeble, elbows slight, no ankle clonus. There is tremor of the tongue and occasional involuntary twitching of the arms. The liver dullness is normal. The urine contains a trace of albumen, but is free from bile and leucin and tyrosin.

June 10.—The patient cries and screams a great deal, sleeps and eats poorly, shows great fear, saying that fish, geese, etc., are going to eat her. She is completely disoriented, the recent and remote memory are very defective and confused. She constantly sees geese and turkeys; fears they will bite her eyes out, hears sounds like geese cackling, etc. "I thought a wooden ball dropped from the ceiling." She fabricates but very little, but talks in a confused, disconnected manner.

July 1.—There is pain and marked tenderness in both legs. Knee jerks and achilles absent. There was increasing apathy with inability to swallow and the patient died July 17, 1904. An autopsy could not be secured.

The next two cases were typical so far as the somatic symptoms of polyneuritis were concerned and the central and peripheral anatomical findings bore out the clinical picture. One of the cases showed at the onset depressive traits associated with symptoms strongly suggestive of typhoid fever, while the polyneuritis was of an acute ascending type, closely simulating Landry's paralysis, a feature of interest, if one remembers the modern opinion of the close relationship, if not the absolute identity of the two diseases. Case XIV showed merely a marked memory disorder, other symptoms of a Korsakow's syndrome were absent.

CASE XIV.

Depressive Delirium with Onset Simulating Typhoid Fever. Marked Confusion. Rapid Polyneuritis of an Ascending Type, with a Peculiar Rigidity in the End Stages and Death from Failure of Respiration. Autopsy. No Axonal Reaction, but Moderately Extensive Central and Peripheral Nerve Degeneration, with Degenerative Chemical Products.

F. de P., aged 26, moulder, was admitted to the Worcester Insane Hospital on January 22, 1903. The family history was negative. For two years the patient has used liquor to excess, frequently taking ten bottles of beer and one-half pint of whisky at a time. About once a week he became intoxicated. There is no history of delirium tremens. About January 15, 1903, he began to complain of pains in the head, became restless, masturbated considerably, wandered about aimlessly and frequently clutched the air for imaginary objects. There was a loss of memory and

he appeared pallid and weak. No signs of neuritis were noticed at this time. On admission the temperature was 100.8° F and the patient was quite weak. During the next few days he was confused, disoriented and making constant attempts to masturbate. The temperature varied from 99° F. in the morning to 101° F. in the evening. There was some slight tenderness in the umbilical region. He vomited occasionally and there was some diarrhea.

January 27. Physical Examination.—Thin and anæmic. No rose spots or splenic enlargement. Muscles flabby. Face flushed. The calves are extremely tender to pressure, but there is no pain along the nerve trunks. The patient complains of pain in the head and chest, and a burning sensation on the soles of both feet. Muscular movements of the eyes normal. Pupils equal and react promptly. Knee jerks absent. No Babinski or ankle clonus. Achilles very slight. Elbow and wrist reflexes very slight. Coarse tremor of tongue, hands and lips. The patient is very weak, and is unable to stand alone. The heart, lungs and abdomen show nothing unusual. Diazo reaction negative.

January 28.—There is less fever and the patient appears brighter. Tongue coated, dry and tremulous. Double Babinski reflex. Tenderness over calves and anterior crural nerves.

January 30.—There is a moderate diarrhea and some general abdominal tenderness, but no rose spots or enlargement of the spleen. Vomiting is persistent. Temperature 99° F. Knee jerks absent. The calves and soles are very painful to slight pressure, and there is extreme tenderness along the lines of the anterior crural nerves, popliteal spaces and biceps. The patient is very weak and unable to stand alone. He knows he is in a hospital, but is unable to tell how long he has been here, calls it, "The City of May," gives the date as "October, 1904," and adds, "My wife brought me here." The productions are of a confused, semi-delirious type, he hears voices talk "death and death and death all the time." There is a complaint of a moderate feeling of "sickness in the head."

February 2.—The fever continues, the patient is slowly becoming weaker and he passes his urine and fæces involuntarily. Knee jerks absent. Feet and legs cold. The extensor and flexor muscles of the feet are very weak. Achilles absent, but typical Babinski reflex on both sides.

February 3.—The patient is completely disoriented and the hallucinations of hearing persist, "They speak from the under place, but I can't understand what they say." Teeth covered with sordes, tongue heavily coated, pulse weak, rapid and thready. He is unable to distinguish between heat and cold on any part of the legs.

February 4.—The tenderness along the nerve trunks has increased, and there is a beginning "droop" of the left foot. The weight has decreased eight pounds since admission.

February 8.—The patient is in a semi-dazed condition and is much weaker. He is unable to retain even peptonized milk. The tenderness

along the nerve trunks is extreme and involves the anterior crurals, sciatics, peroneals, tibials, medians and all the lower intercostals below the fifth. The calves are very painful. There is considerable hiccough. Knee jerks absent. Abdominals and cremasterics very slight. Double Babinski, more marked on the right side. Urine negative except for a large increase of indican. The "drooping" of the left foot has increased and the muscles are weaker. The mental state is that of a delirious stupor.

What city is this? "Naples." What month? "November." What makes you so sleepy? "They pinch me one side and then the other side." Who? "A man." What man? "Now nobody pinches me." Why are you here? "To beat them at the lottery." What lottery? "Because coal is high. I hear something in my head."

February 10.—During the last day the patient has grown considerably weaker, and the pulse rate has become more rapid (120). He lies in a comatose state and there is a sudaminous papular eruption over the chest, back, and forehead. Respiration 32, of the Cheyne-Stokes type. He is unable to swallow and retains but little of the nutrient enemata. Pupils equal and react slightly to light. The entire body is rigid and occasionally he slowly assumes a position of opisthotonos. Jaw partially open and rigid. There is strong resistance of both arms, which are loosely folded over the chest and on one an attempt to voluntarily move the left arm, it showed a strong tremor. Temperature 100.4° F. Knee jerks absent.

February 11.—There is no leucocytosis. The fever fluctuates between 100° and 101° F., respiration more rapid and of a constant Cheyne-Stokes character, the legs livid and cold. Died at 7.45 p. m.

Autopsy 10 minutes after death (Dr. T. A. Hoch).

Anatomical Summary.—Intestines negative. A few old adhesions over right and left apices. Spleen and kidneys show nothing unusual. Brain weight, 1380 grms. Practically no œdema. Slight haziness along the lines of the vessels. Fourth ventricle free from granulations.

Microscopical Examination.—(Nissl stain.) Some acute alteration of cortical and anterior horn cells. With Marchi method there were found a few well blackened fibres in the white matter of the motor region of the cortex, in the posterior columns of the cord, their nuclei in the medulla and in the lateral pyramidal tract. The crural, median, sciatic and popliteal nerves showed a moderate number of degenerated fibres. Cholin was found in the brain, cord, peripheral nerves and cerebro-spinal fluid, the amount in the nerve tissue being parallel with the extent of the Marchi reaction.

CASE XV.

Delirium with Marked Memory Disorder. No Fabrications or Suggestibility. Polyneuritis with Muscular Atrophy. Death from Pulmonary Tuberculosis. Autopsy. Central and peripheral Nerve Degeneration. No Axonal Reaction.

J. M., wheelwright, aged 65, was admitted to the Worcester Insane Hospital on April 22, 1903. He used liquor steadily and excessively and

about April 10, he became restless, disorderly and excited. He was dull, stupid and feeble on admission and refused to answer questions. For the first few days there was constant vomiting and slight fever. Later he showed considerable irritability.

May 12. Physical Examination.—Anæmic and poorly nourished. Skin dry, brown and rough. Tongue heavily coated. Foul odor to the breath. There is pain over the calves and along the various nerve trunks. Pupils equal and react promptly. Hyperæsthesia of the legs. Knee jerks absent. Superficial reflexes sluggish. Elbow and wrist reflexes slight. Impairment of bladder and rectal reflexes. Slight tremor of tongue and hands. Grasps equal and poor. The muscular power is generally diminished and there is considerable incoordination of the foot and hand movements. Gait very unsteady and straddling. Some unsteadiness in Romberg's position. The muscles of the thighs and calves are considerably wasted. The left lung shows dullness in the upper lobe with increased fremitus, coarse rales and harsh breathing. The arteries are considerably thickened and tortuous. The heart is negative.

May 14.—The patient is dull and apathetic, frequently only mumbles in reaction to questions, but is occasionally noisy and frequently calls for whisky. He knows his name, but is otherwise completely disoriented. What date is this? "March, 1882." What place? "I don't know." Is it a hotel? "I suppose so." There is absolutely no grasp on the surroundings, and both the recent and remote memory show an extreme impairment. There are no fabrications or suggestibility. He seems to have difficulty in fully grasping questions, and the replies are almost at random at times. During the month the temperature varied from 99 to 102; he was very filthy and the mental and physical status remained unchanged. The speech was thick and scarcely intelligible.

June 19.—Peculiar twitching of the arms. Tongue is clean and median, shows a slight tremor. Knee jerks absent. Elbow and wrist reflexes exaggerated. Achilles absent. Marked atrophy of epithenar, interossel, forearm, calf and thigh muscles. The legs are weak. There is no special pain along the nerve trunks, but the calves are tender.

The patient's mental condition remained fairly constant, but he became weaker and lost considerable in weight (31 lbs.). A pustular eruption appeared over the face and hands, towards the end he became quite restless, but no rigidity or twitchings were noticed. He died suddenly on July 11, 1903.

Autopsy 16 hours after death (Dr. T. A. Hoch).

Anatomical Summary.—Old pleural and pericardial adhesions. Atheroma. Thickening of mitral and tricuspid valves. Tuberculosis of both lungs. Intestinal ulcers. Brain weight, 1460 grms. Covolutions soft. The frontal poles show much atrophy. Slight thickening of pia, especially along longitudinal fissure. No granulations in fourth ventricle.

Microscopical Examination.—The Nissl method shows some acute alteration of the cortical and anterior horn cells, but no axonal reaction.

With osmic acid, there are many blackened fibres in the posterior columns and their nuclei in the medulla, and a few in the lateral pyramidal tracts, but none in the cortex. The ulnar, median, popliteal, crural, radial and pneumogastric nerves showed a moderate number of degenerated fibres.

In case XVI, although there existed a typical neuritis, yet the accompanying mental disorder was atypical. Although the latter was of a fabricating type, yet it showed many points of difference from a Korsakow's disease.

CASE XVI.

Fabricating Delirium of a Rather Acute Type with Marked Neuritis and Paralysis of Extensors of Left Middle, Ring and Little Fingers. Recovery.

W. A. D., aged 28, was admitted to the Worcester Insane Hospital on August 21, 1903. The family history was negative and the early development not unusual. The patient has been a farmer since leaving school. He is married, but there are no children and no history of miscarriages. He has used liquor reguarly and excessively since the age of 16. About June, 1903, however, he discontinued drinking, because of pain in the legs and was compelled to go to bed. He began to see snakes and frogs, more at night than in the day, he heard strange sounds, slept poorly and was very restless, especially during the night. He rapidly became disoriented. The memory became progressively impaired. There was a constant complaint of a feeling of snakes crawling on the body, and the pain, which at first was localized only in the feet, gradually became worse and ascended to the knees, necessitating complete confinement to bed. About the beginning of July there developed a paralysis of the three fingers of the left hand. On admission, he was quite weak, completely disoriented, claiming that he was in a jail, etc.

Physical Examination.—The muscles of the arms and legs are very flabby, but there is no atrophy. There is an acne rosacea of the cheeks and nose. There is tenderness over the calves, thighs and popliteal spaces, and along the lines of the sciatics and anterior crural nerves, more marked in all cases on the left. There is a sensation of formication in both feet, but no other cutaneous disturbances. Knee jerks and Achilles absent No ankle clonus. Plantar reflex slight and normal. Bladder and rectal reflexes not impaired. The elbows and wrist reflexes are lively on the left, but much diminished in the right. The superficial reflexes are absent. The pupils react normally, but there is some unsteadiness of the eyeballs on extreme inward and outward rotation. The gait is unsteady and careful, he holds the legs widely apart and there is no moderate swaying in Romberg's position. Tongue median with a slight tremor. Coarse tremor of both hands, more marked on the right. There is complete extensor paralysis with marked drooping of the middle, ring and partly

of the little fingers of the left hand, but without any muscular atrophy. There is also some weakness of the extensors of the toes. Tremor of handwriting. The heart, lungs, abdomen and urine are negative.

August 24.—The patient sleeps poorly, talking and laughing a great deal, yet occasionally will cry and say that his sister and mother are to be shot. He lies in bed with both knees flexed, shows considerable motor restlessness at times and a marked occupation delirium, making motions of driving horses and milking cows, etc. The tenderness and the absent knee jerks persist. The temperature is 100, the pulse about 110 and rather weak but regular.

August 26.—The restlessness continues, and he is completely disoriented, claiming that he is in St. Vincent's Hospital, East Brookfield, Mass., and gives the date as March, 1902. He insists that he was brought to the hospital to be treated for a "stiff neck." The memory for the immediate past is poor, but there is little or no disturbance of the Merkfähigkeit. He frequently replies to imaginary voices and beckons with his hands to imaginary personages. There are some fabrications and he is moderately suggestible. He suddenly turns around and says, "It is time you went home and had your corn husked. I feel pretty bad. I want to live long enough." Why? "I want to see that man." Whom? "The American. He fools those fellows right in front of their eyes." What about it? "Nothing, he killed my sister." How did he kill her? "Bled her, he didn't exactly kill her, but he bled her."

September 4.—The patient is not so suggestible as formerly, the fabrications are disappearing and he is becoming partly oriented. Knee jerks absent.

September 12.—The palsy of the fingers of the left hand is less marked and their extensor power has improved. There has been a gain in weight. The knee jerks are absent and the legs are still a little tender to pressure. The gait is much improved.

September 19.—The droop of the fingers of the left hand is less marked, but the extensor muscles are still weak. He is oriented, but is unable to state how long he has been in the hospital. The patient gradually improved, became mentally clear, gained greatly in weight and the paralysis of the fingers completely disappeared. The knee jerks remained absent, however. There was practically an amnesia for the delirium. Discharged November 18, 1903, recovered. Two months later the patient visited the hospital and while he remained mentally clear and was then a total abstainer, the knee jerks were still absent.

The following case is merely one of a chronic alcoholic deterioration, but with so many accompanying features of tables, that only with the clearing up of the physical signs, could the diagnosis of polyneuritis be made. Like case VII it was typical of the neuro-tabes of Dejerine.

Heilbronner has pointed out the similarity of the posterior column degeneration in neuritis to that of tabes, and yet in only two of my cases with absent knee jerks, could the Argyll-Robertson pupil be demonstrated. So closely did these two cases resemble tabes clinically, with the further confusion of a previous history of syphilitic infection, that only with the reappearance of the knee jerks and the returned pupillary reflex, was the clinical picture cleared up. The influence of the experimental injection of alcohol on the knee jerks has been studied by Allen, by means of the instruments described in Sommer's book in psychopathological methods. An analysis of the curves produced showed in the main that alcohol produced a change in the height, as well as the form of the curve. This change began after the first injection of alcohol and after 100 grammes had been taken, a sudden removal of cerebral inhibition became manifest. There was a continuation of the reflex irritability one-half hour after the end of the experiments.

CASE XVII.

Alcoholic Deterioration with Prominent Memory Defect. Failure of Cardiac Compensation. Polyneuritis. Recovery.

E. McG., aged 28, was admitted to the Worcester Insane Hospital on September 6, 1904. All the male members of the family used alcohol with occasional excesses. The patient had an average education and after leaving school was a worker in lead paints for several months, but there was no history of lead poisoning. He acquired syphilis in 1897 and underwent treatment for several months. He began to drink whiskey at twelve years of age and used it steadily with frequent excesses. About the middle of August, 1904, he became irritable and seclusive and complained of pains in the legs, which were ascribed as rheumatism at the time, the memory began to fail, he would frequently ask the same question and was unable to recall where he had placed articles. He was quite weak on admission to the hospital, and had a temperature of 100.8° F., pulse 116, respiration 30. He spoke freely but was disoriented for time. Tongue slightly coated but steady. Oedema of feet, ankles, scrotum and penis. Knee jerks absent. First mitral sound completely replaced by a blowing murmur, which was only partially transmitted. Chest filled with fine, crackling rales. Occasional dyspnœa and cough. Face a little cyanotic.

September 7. Physical Examination.—Acne-form eruption over the face and arms. Less œdema. No enlarged glands. Marked tenderness in both calves, popliteal spaces and Scarpa's triangle. Pupils slightly un-

equal and react slowly to light and accommodation. Hyperæsthesia of the legs; knee jerks, elbow, wrist and Achilles reflex absent. Plantar reflex normal. No tremor of lips or tongue. Extensors and flexors of toes are moderately weakened and there is a tendency to drooping of both feet. In walking, he sways the body, and holds the legs widely apart. Marked swaying in Romberg's position. No speech defect. No tremor of writing. The left border of the heart is a finger's breadth beyond the nipple line, and the first mitral sound is considerably muffled, but no murmur is heard. Blood pressure 110 mm. Hg.; chest filled with fine rales. The urine is free from albumen, but contains many narrow hyalin and finely granular casts.

He is silly and laughing and repeats questions a number of times. Orientation is not impaired. There is a good grasp on the surroundings. There is very slight improvement of the recent memory and of the capacity for recent impressions. The remote memory is perfect and there are no fabrications or suggestibility. He calculates well, but in reading, can recall only imperfectly the content read. There are no hallucinations or delusions.

September 9.—The physical condition has improved but the chest still contains fine rales. Knee jerks absent. Unable to stand in Romberg's position with the eyes either open or closed. Still walks with a straddling gait. The tenderness along the muscles and nerve trunks continues as previously recorded.

September 13.—Complains of a weakness of the left arm with a feeling of cold and numbness.

September 15.—The lungs are free from rales and the pulse is strong and regular. The first mitral sound is much clearer.

October 1.—The signs of the failure of cardiac compensation have disappeared. The patient is partially disoriented for time. No fabrications or suggestibility.

October 6.—Improvement in gait. Knee jerks still absent. Marked swaying in Romberg. Pupils react promptly to light and accommodation. Up to June, 1905, the patient gradually became brighter and there was a marked improvement in the memory. The knee jerks, however, remained persistently absent.

June 5, 1905.—Knee jerks brisk and equal. No memory defect. Perfect insight into previous mental condition. No swaying in Romberg's position. No speech disorder.

July 7.—Knee jerks equal and lively. There is a slight tremor of the tongue and fingers. The pupils are equal and react promptly to light and accommodation. Discharged recovered.

Summary.

From the clinical histories of the seventeen cases here reported and from a review of the literature along these lines, we can at

least arrive at the following tentative conclusions concerning the associated mental disturbances of alcoholic neuritis.

1. The neuritic disturbances may take several distinct varieties, either as a central or peripheral eye-muscle palsy, in the sense of a neuritis of the peripheral fibres of the various ocular nerves, or changes in one of the numerous cell groups of origin of the oculo-motor nerve in the region of the central grey matter. In one case this may give rise to either a ptosis or an isolated paralysis of one of the eye muscles, when of peripheral origin, or when there is a central change a complete ophthalmoplegia may result. In the latter case we have the complex of an acute polioencephalitis and we have already seen the close relation of this complex to delirium tremens and Korsakow's disease.

The associated mental disturbance, whether the eye-muscle paralysis be of central or peripheral origin, is caused by the profound implication of the higher central neurones, and we have either a delirium with marked allopsychic disorientation or a fabricating psychosis. On the contrary there may be a peripheral neuritis in the ordinary acceptance of the term, with the associated central changes in the form of a degenerative process in the posterior columns of the cord and their nuclei in the nedulla. This posterior column degeneration has been so marked at times, combined with the neuritic pains, that it bears a strong resemblance to tabes, so strong, in fact, that Dejerine has proposed the name of neuro-tabes for this symptom. Signs of a peripheral neuritis, may, however, be entirely absent, the lesion being preeminently of central distribution, with a parenchymatous degeneration of various systems and their cells, and manifested clinically only as a terminal disorder with peculiar and prominent, but almost pathognomonic motor symptoms. Sometimes there exists a combination of a peripheral with a central change, either in the sense of a true peripheral with a central neuritis or a peripheral eye muscle paralysis combined with a delirious state. There are, however, no sharply limited types, as cases of ordinary peripheral neuritis are nearly always associated with central lesions. This has been especially well shown by the recent work of Cole, who also looks upon the mental disorders of alcoholic neuritis as closely related to the central changes, both in the sense

of the axonal reaction of the Betz cells with a degeneration of their connected fibres in the pyramidal tracts and of a well marked posterior column degeneration analogous to tabes.

2. There may exist the form of psychosis described by Korsakow, but which also may occur without any signs of a peripheral neuritis and in addition may be caused by other factors besides alcohol. It may arise out of a depressive or stuporous state, an acute hallucinosis or an ordinary delirium tremens, the latter, especially if associated with transitory neuritic disturbances, may present many allied features of the height of the disease.

3. A delirious state, strongly resembling delirium tremens, but of a very acute onset and when associated with signs of a peripheral neuritis, there may exist in addition a marked disorientation, extremely poor retention, defective memory for recent events and confabulation. Under these conditions we have an acute Korsakow's disease. The confusion is usually deeper than in ordinary delirium tremens, especially if associated with an eye-muscle paralysis; the physical decay is extremely rapid and may end with the motor disorders of a terminal central neuritis. The course of the disease is usually acute on account of the rapidity of the pathological process.

4. A very acute delirium of Korsakow's type, with isolated neuritic symptoms and progressing rapidly to recovery.

5. A true delirium tremens which may shade into a fabricating psychosis. In these cases, recovery is not complete, but there remains a light degree of mental deterioration, or the delirium may rapidly subside and leave a slowly improving neuritis. If neuritic symptoms appear during the delirium, there is always superimposed suggestibility and marked fabrications.

It is these types which show the extremely close relation between delirium tremens and Korsakow's disease. These cases differ from our third group by the absence of physical deterioration and the strong tendency to a partial recovery.

6. A group of cases with a protracted course, showing a marked depressive affect, with suicidal tendencies, strong religious ideas, episodes of great fear and anxiety and a marked hallucinosis. At the onset or height of the disease signs of peripheral neuritis are absent, but during the protracted course there develops emaciation with diarrhea, and finally rigidity and

twitchings, all the clinical symptoms of a central neuritis. These cases, therefore, present a central neuritis as the particular neuritic lesion of the disease and they are closely allied to Meyer's delirious and depressive disorders.

7. There may be a pure acute hallucinosis, entirely free from an allopsychic disorientation, in which the neuritic pains may form the basis of various delusional interpretations, analogous to the paræsthesias of the alcoholic paranoic states without neuritic signs. On the other hand, a peripheral neuritis may be absent during the hallucinosis to appear later in connection with typical fabrications and disorientation. Under both conditions the outlook for recovery is very favorable.

8. Depressive delirious states of a very rapid course, with marked physical symptoms of a polyneuritis, or there may exist a dreamy hallucinatory confusion, but without fabrications or amnesia in either case.

9. A fabricating delirium of an acute type, not resembling delirium tremens and showing striking features of difference from Korsakow's disease.

10. A group of cases resembling at first an alcoholic deterioration, with a marked recent memory defect, running a rather slow course, but with an almost complete recovery parallel with the improvement in the physical signs.

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A CASE OF DEMENTIA PRÆCOX OF MEDICO-LEGAL INTEREST.[1]

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It is not rarely a matter of much nicety to determine that impairment of mental integrity which shall justify exemption from responsibility for criminal acts. Especially is this true when the criminal action has been the taking of life, always an abnormal thing.

A grave duty rests upon the examiner in such cases, for it will be his desire that no violence be done to the law nor justice strained, and, at the same time, it will be his duty to guard against such miscarriage of justice whereby an irresponsible prisoner may suffer the penalty of law intended for the sane.

It has been thought that the following case is of sufficient interest to merit its record from the medico-legal standpoint.

On May 15th, 1905, late in the evening, a woman, 56 years of age, living at Trenton, Mich., was murdered in her own bedroom. Her husband, 53 years of age, a rather easily excitable Pole, found her lying, still living, upon the floor beside her bed and at once aroused the neighborhood. So soon was it after the assault that the neighbors responding to his cries of alarm found the room still filled with smoke of the weapon which had been used, and the circumstances were deemed so very suspicious that, despite his protestations of innocence, the husband was arrested, charged with the murder of his wife. The next day, however, a Detroit policeman was approached by a young man who said that he wished to give himself up, because he had murdered a woman in Trenton on the previous evening. He was taken to the county jail and a few days later arraigned in court, charged with murder.

[1] Read before the Wayne County, Mich., Medical Society.

His conduct was so unusual that the presumption of insanity was at once raised, and the court appointed a commission to examine the prisoner and determine as to his mental condition.

I first saw the prisoner at the jail, four days after the murder, when I found a man of average size, cool and self-possessed, much of the appearance of an ordinarily intelligent farm-hand. He was apparently frank and candid in his replies to questions and in his account of his life and conduct.

At this and other interviews the following history of his life was elicited. He was 26 years of age, born near Trenton, had never been married, had been a farmer and a fisherman and for nearly a year a dairyman at the State Asylum, at Ionia. His education was that of the common schools, in which he had advanced to the sixth grade. Up to the age of 15 or 16, he worked much uopn his father's farm, then fished for a living for several years. He then enlisted in the army and was sent to the Philippines, where he had malarial fever and dysentery. He was apparently a good soldier, one above the average, as he enlisted as a private and was honorably discharged as a sergeant. After leaving the army, he again fished for a time, afterward going to the Asylum at Ionia, where he had worked as a dairyman up to the day of his crime.

He claims to have always been a peaceably disposed man and says he never had trouble with any one except on one occasion when he assaulted a man who owed him and who had refused to honor his obligations; he denied excesses in alcohol, but admits that he has been intoxicated twice in his life, though he cares little for either beer or whiskey.

His father is living, is a farmer, and has been a hard drinker, at least since prisoner's boyhood. His mother, he thinks, once had a brain fever, and has been "out of her head," but he can assign no other reason for this allegation than that she had a habit of talking to herself. He alleges that the four brothers and two sisters, who are living are all "real smart." One brother died in infancy, one at 22 of consumption, and one brother died insane at the Michigan Asylum, at Kalamazoo. Examination of his head which is ordinarily well-shaped shows nothing abnormal except a very narrow and highly-arched palate. His foreskin

shows the scar of a chancre which he says he contracted within the past year. His pupillary and patellar reflexes seem to be quite normal and his mental reflex seems to be in entire accord with his general mental attainment and to be essentially normal. His intelligence is fair, his memory excellent, his attention good and well sustained, generally speaking, although he is somewhat inclined to digress from his story into unessential details.

When asked to give a history of the recent events which had led to his present situation, he invariably begins with an account of his feelings when he awakened on the previous Sunday morning, May 14th, when he says, he "felt miserable" and his "head felt heavy," his tongue being coated; his mouth "felt slimy and lower lip blistered." On Monday morning, too, he says he "felt bad," "kind of out of my head," "I acted as if I wanted to quit and didn't want to say so and the superintendent came out to the barn and told me that I evidently wasn't well and would better lay off and take a vacation." He acted on this suggestion and was discharged. A letter from the superintendent of the asylum, at which he was employed throws more authentic light upon his conduct up to this time and reveals that abnormalities of demeanor had for some time previously been occasionally noted. From this letter it is learned that he had been for almost a year in continual employment as dairyman and that he gave most satisfactory service, was quiet, of excellent habits, staying closely about the institution and being apparently interested in his work. He was not absent from duty one day during the time of his service (eleven months and a half). He was known as of good disposition and no complaint was ever made of his having ever ill-treated any of the patients who worked under his charge and direction.

Some ten days before his departure, however, he had notified the supervisor that either his work must be changed or he must leave as he "could not get along with the farmer," who had charge of the dairy in which he worked. The farmer, however, stated with surprise that he had had no trouble whatever with the man. A few days later he told another official that he must for a similar reason leave the institution but was easily dissuaded and consented to remain.

On the morning of May 15th, he went to the office of the

medical superintendent (which he had never before visited) and began conversation by stating that the superintendent knew that he was a Catholic though somewhat lax and that he must now return to his church so as to be married in the Catholic church. The conversation being directed to other channels, he readily consented to remain if the superintendent so desired.

Within a half hour after their conversation, he visited another office which he had never before visited and told the stenographer that he could perhaps help him to decide as to which of two girls he ought to marry, asking the stenographer if he had been in the society of one of these girls. During the conversation, he interpolated the irrelevant remark: "My brother died in the Kalamazoo Asylum, but that makes no difference to me." These eccentricities of conduct led to the suggestion being made to him an hour or two later, that he would better go to his home for a little rest. This elicited the prompt reply: "I think I had better go; I am bewitched; my sister was bewitched."

He had made no threats of violence, had shown no evidence of any fixed delusions, and was not regarded as a dangerous person to be at large, and so was permitted to leave the institution. To the supervisor who accompanied him to the train he complained that an unknown woman upon the platform was "making faces" at him, but seemed satisfied when told that he was mistaken.

It was later learned that just before leaving the institution while waiting to be paid, he went to the laundry and proposed marriage to the laundress, a girl with whom he had not been especially acquainted, evidently a purely impulsive act. He also told the farmer that he "wished to quit work, as everyone was against him." Two weeks before this, he stated to a male attendant with whom he was walking, that he ought to strike the stenographer, whom they were just about to pass, but instead of showing any hostility, he passed him and greeted him pleasantly. He had had no trouble of any kind with this man. He gave no reason for his remark.

He was seen, on this afternoon, to board a train for Detroit, which place he reached the same evening. In giving his own account of his feelings, he spoke as if he had been somewhat

mentally confused, for he alludes repeatedly to his having felt as if "he wanted to take a trip" and says that two or three times in his life he had felt as if he must "take a trip." He alleges that on this day he "started on a trip," not knowing just where he was going. He tells clearly of the station at which he arrived in Detroit and where he went to board the electric car, buying a ticket for Monroe, which is beyond Trenton, the station at which he left the car. He can give no adequate reason for his terminating his journey here other than that he felt as if he could not longer remain upon the car and must get off there. "It seemed as though I didn't know where I was going, yet I kept on going," he said.

It is about a half mile from where he left the car to the town and he claims to have seen only two men, who overtook him and of whom he inquired relative to hardware stores, although he knew the locality, having previously lived there. He visited a store about 9 p. m. and bought a revolver and cartridges (of 32 calibre). He is explicit in his account, stating that he gave in payment a ten dollar gold-piece, that he took his change and at once left the store, starting immediately for the house of his Godmother.

The following is his own account: "When I got on the stoop, I heard a noise in the house; I walked into the kitchen and this noise was still louder, and she was talking some kind of a language I didn't understand. She is a Polish woman and I can understand some Polish, for my mother is Polish and my father is German, but I didn't think she was talking Polish. I went into her bedroom and as I came into the room, I stood near the foot of the bed. She raised up in bed and I cooled right off and it seemed as if I felt better that I was going to commit this crime; seemed as if I had to. She began to holler and I commenced to fire and emptied it. She fell out of bed. I went into the other room and reloaded my revolver and went back into the bedroom and I believe I took the light with me and shot her once or twice. She was making some noise and I shot her as near the heart as I could." Asked if he killed her, he replied: "Yes, I think so; she stopped groaning and was still." Asked if he struck her, he denies any memory of such an act. The body, however, bore the

marks of blows, and a broken chair, the leg of which fitted marks in the ceiling, showed that the murderer had apparently stood over the body and repeatedly struck her with this chair. At no time did he admit any memory of other violence than the shooting. With this exception, his account would seem to be in accordance with the truth.

On several occasions, he went over the narration of these gruesome happenings in the same prosaic and matter-of-fact manner, devoid of emotion and without sign of adequate regret or penitence, nor did any two recitals vary in any essential particular.

He was evidently not confused or greatly excited as he recites in great coolness that he left his umbrella hanging on the fence, while he was in the house and took it with him when he came out. He avoided a man who crossed the street just after he left the house; and had no notion of molesting or shooting him. This was undoubtedly the husband of the woman whom he had just killed.

He made his way to a hotel down town where he engaged a room and retired, sleeping all night. He was called in the morning, ate his breakfast, and bought a cigar. It was later recalled that after hearing the telephone ring, he asked if it was the sheriff who had been talking. He soon left the hotel and walked over to take the car bound for Detroit, throwing away his revolver and cartridges as he went, where they were later found. He returned to Detroit and bought a ticket to Ionia, but while sitting in the station he thought, that, to use his own words, he was " not doing the right thing," and he sought a policeman, to him confessed the crime which he had committed, surrendered himself, and was locked up.

The narrative given above and repeated to us on different occasions was always devoid of show of emotion and given with an air of sober earnestness and honesty. He makes no attempt to give any adequate motive for his act. The satisfaction of lust is here practically out of the question and indignantly denied by him and he as strenuously rejects any suspicion that he was bent on thieving, nor is there evidence that any property was disturbed. The newspapers had much to say about belief in witchcraft being the underlying motive and it will be noted that he had, at Ionia,

alluded to the fact that he believed himself bewitched and had thought his sister bewitched. To our repeated questionings, however, he denied any brooding over being bewitched or ever having thought specially of this woman as a witch. He said to me: "I had no grudge agin' her and know of nothing against her except my father used to say 'she's an old witch.' I never saw a witch as I know of but I believe there are people who can over-mind others." He further states that at the time of the shooting, he had no thoughts of her being a witch. He denies any definite intentions of shooting her when he bought the revolver and denies such a purpose until about half-way to the house. He repeatedly stated that he did not know why he killed her, adding: "It just seemed as if I had to." He adds that prior to the murder his bones used to ache and his joints crack and that since the affair all these feelings had left him and he feels much better. He recalls a previous instance eight or nine years ago when there seized him this same feeling that he "must take a trip." He left his work and rode upon his bicycle to this woman's house, without any weapon, however, or any thought of harming her. He had a short talk with her, mounted his bicycle and returned to his work. The feeling which seized him was that he "had to go to her house." He denies, however, that he at any time had any definite command to do such a thing.

Asked as to his own ideas as to his acts, he said "I realize that it's a serious crime, following the law, but I don't think that I am altogether to blame. I believe I was sort of doped. I admit that I feel sorry for this, but yet it seemed that I had to do that." Perfect candor characterized his demeanor at all our interviews. Such were the facts of the crime, the story of its perpetrator, and such his attitude toward his acts. Now let us glance for a moment at the stock from which he sprang, for the moral and mental heritage counts for much.

The father and family live in a plain, simple farmhouse of insufficient accommodations for all those whom its roof shelters. The father, a man of good size, age 63, has the dull and stolid look which one might expect to find in a Russian peasant; his head is ill-shapen, high and narrow, decidedly dolicho-cephalic. He can neither read nor write but speaks with fair intelligence English, German and some Polish.

The mother is of decidedly inferior appearance; she appears as if much demented, and one could scarcely believe her ever to have been above the plane of a possibly high grade imbecile, yet she has borne to this husband ten children, one of whom died insane. Two sisters, of 19 and 24, are of a fair degree of intelligence and assure us that neither they nor the family believe in witches and they deny that witches have been talked of in the family circle. A maternal uncle, we learn, was an inmate of a German asylum, and thus a decidedly psychic taint seems well established. The average of intelligence is decidedly bad and the hereditary bequest to the mental make-up of the prisoner was evidently a handicap, indeed, giving him a poor basis on which to build a responsible type of citizenship.

If this man is insane, to what class does he belong? The invariable dating of ill feelings preceding his crime from his awakening on the day previous with a foamy and slimy mouth, a sore lower lip, and headache were strongly suggestive of an epileptic attack following which there might have been a prolonged period of mental confusion, but careful investigation of his previous life through childhood, boyhood, and up to the present time failed to reveal anything having any possible semblance of epilepsy and it may be worth while to note that for a year he had been under expert supervision, during which his health had been apparently perfect, his conduct exemplary, and his work entirely satisfactory. Nowhere in his history could we find anything to confirm a possible suspicion of epilepsy. His family reported him as having been through boyhood a healthy, good-natured, industrious boy.

The history of the case and the conduct of the patient are scarcely suggestive of manic-depressive insanity; but certain features do seem to correspond well with dementia præcox. We are particularly fortunate in being able to learn so clearly of the several incidents during the few days and weeks immediately preceding his leaving the institution, which characterize his mental status as clearly an abnormal one. There is lacking a continued or deep depression, likewise anything suggestive of a persistent tendency to mental elation. It is to be recalled that every day he faithfully followed the ever recurring round of homely duties. He is not charged with failure or remissness in his work,

nor, up to the day of his crime, had any act or tendency been so overt as to positively stamp him as alienated. Rather, the occasional acts and remarks are those characteristic of a state of mild mental confusion. Evidence of systematic or fixed delusions seem wanting and his erratic remarks reveal no persistent purpose nor well formed ideas. They are rather the purposeless, impulsive, acts and remarks not infrequently noted in dementia præcox. The vague and poorly systematized ideas of persecution seem to me to stamp this case as of the paranoid form.

Mental enfeeblement is betokened by his general indifference, his lack of any spontaneous mental action and the decided mental hebetude, which, according to his fellow prisoners, characterized his conduct while in jail. The physical stigmata seen in the ill-shapen head of the father (and appearing in the narrow and high arched palate of the prisoner), the mental stigmata seen in the mother and maternal uncle (and showing again in this case, and in that of his brother who died insane in the asylum at Kalamazoo, a case of irritable dementia præcox) afford ample groundwork, physical and mental, for the breeding of a dementia præcox.

If we seek further to align this case with the more salient diagnostic features of dementia præcox we shall find evidences of stupor only in the lowered plane of mental action, the general indifference and apathy, a sort of mental and moral inertia, which was really markedly evident.

We shall fare hardly so well as to mannerisms which were scarcely well-marked here, although he greeted his visitors in a rather limp manner and his smile was not of that kind behind which there is any vigor of mentality. Neither can I say that stereotypy was at all positively well-marked or at any time greatly in evidence. Negativism here was practically absent as likewise was anything savoring of the cataleptic.

His attention in the main was fair, though, left to himself, he was prone to wander from the path of directness upon which he had once started and, pushed to details, this power decidedly lagged.

His inclination to an automatic obedience may perhaps be noted in his readiness to abandon at once his announced intentions of leaving his work (because of fancied differences with others) almost as soon as his intentions had been declared.

There is of course, a natural repugnance to regarding anyone who has been proven insane as responsible for his acts, yet we may err greatly if we at once conclude that mental taint shall exempt from all responsibility.

The test must be one of reason and expert knowledge rather than a blind following of some inflexible formula which but half states the essentials requisite for reaching so grave conclusions.

It seems strange, indeed, that an eminent legal authority (Lord Mansfield, discussing a case of murder under the promptings of delusion), should gravely charge that "if such a person were capable *in other respects* of distinguishing right from wrong, there was no excuse for any act of atrocity which he might commit under this description of derangement and that it must be proved beyond all doubt that at the time he committed the atrocious act he did not consider that murder was a crime against the laws of God and nature." Yet this "knowledge-of-right-and-wrong" test was long followed. Of still earlier application was the so-called "wild-beast test." In an English trial, it was claimed that to exempt a man from punishment for his acts it must be pointed out that he is "a man totally devoid of his understanding and memory and doth not know what he is doing no more than an infant, than a brute, or a wild beast." Such a proposition needs now only to be heard to be at once rejected.

Equally fallacious with these tests was the somewhat psychological attempt at measuring responsibility which asserted that "the dominant impression in which their delusion consists should be regarded not as an error, but as truth; in other words, their actions ought to be considered as if they had been committed under the circumstances under which the individual believed himself to act." Such a test is even less helpful and far less scientific than the others mentioned. The psychologist has not been a success in throwing light upon this dark corner of human knowledge.

Advances from these earlier and faulty tests have only been achieved through the eloquence of sensible pleaders who have had that clearer vision which has won victories for common sense and broader views of justice.

Insane acts, it should also be noted, are not necessarily the offspring of delusions and this is well illustrated in this case.

Legal authorities have been prone to lay too much emphasis upon the importance of delusions as the chief factor in these cases, whereas they may be but a minor feature or entirely wanting.

It seems to have been of late years the effort of our American courts to broaden the scope of inquiry and to take a more rational view of the tests which should be applied. They are more inclined than was formerly the case to inquire broadly not only as to whether the individual upon trial is the subject of insanity but also to ascertain whether the crime with which he stands charged is the direct offspring of his mental defect. And if they seek enlightenment as to the respondent's appreciation of right and wrong and the significance of his acts, they are very properly disposed to go further and inquire if, knowing right from wrong, the respondent had the power to do the right and the necessary inhibition to keep him from the wrong.

Few cases could, however, better than this one illustrate the sometime futility of grave inquiries as to knowledge of right and wrong as a conclusive or guiding test as to mental responsibility. Knowledge of right and wrong would be promptly admitted by the prisoner in this case but he justifies his purely impulsive act by no form of reasoning. The strength of his impulse far overbalanced his powers of inhibition. Careful consideration of all of the circumstances led the Commission to the unanimous conclusion that his act was the result of insanity and we so reported to the court, and on our findings the respondent was committed to the State Asylum for insane criminals.

His mental and moral indifference to the significance of his actions, his general apathy and needless confession, indicating undoubted mental enfeeblement, the utter lack of any adequate motive or definite purpose, all go to stamp his as an insane act, the legitimate and direct offspring of his mental defect, and hence as an act for which he could not properly be held responsible before the law.[2]

270 Woodward Ave.

[2] The following note is self explanatory and lends additional confirmation to our diagnosis:

STATE ASYLUM, IONIA, MICH., Feb. 5, 1906.

Dr. Charles W. Hitchcock,
Detroit, Mich.

Dear Doctor: I have received yours of the 31st ult., making inquiry regarding Frank Lesner. There has been comparatively little change in his condition since he was received at the institution. He was always quiet, of retiring disposition, and that is the disposition he exhibits now. He finds no fault, thinks that he did right, and is confident that "everything will come out all right." His perfect contentment with surroundings, taking no special interest in friends or the outside world, is probably indicative of progressive dementia. I have not the least doubt that it is a case of dementia-præcox.

Very respectively yours,

O. R. LONG, *Medical Supt.*

Clinical Psychiatry.

CLINICAL DEMONSTRATIONS.

By CLARENCE B. FARRAR,

Assistant Physician and Director of the Laboratory, Sheppard and Enoch Pratt Hospital; Assistant in Psychiatry, Johns Hopkins University.

The following case is the first of a series which it is proposed to publish in the form of clinical demonstrations. Many of them will be cases which have been considered in the fourth year clinics in the Johns Hopkins Medical School. The object is therefore not necessarily to present unusual or extraordinary disease-pictures, but to offer in narrative form certain valuable type cases, emphasising the available diagnostic and prognostic indications. Such records, if they serve no other purpose, may be of value to the men who follow the clinical work in psychiatry at the hospital in recalling to them in convenient form the essential features of the cases which they have themselves seen in the wards.

I.

DEMENTIA PRÆCOX.

Onset at 18. Fifteen years' duration to date. Two remissions. Original attacks diagnosed "Acute Mania." Profound Affect-Dementia.

The first patient, Miss M., 34 years of age, shows as she enters the room, a somewhat constrained and unnatural demeanor. She takes quick, jerky steps, stops irresolutely, peers unappreciatively about, advances and greets those present with a very affected bow, but no smile. Her facial expression suggests alienation of long standing. As she speaks her manner of intonation at once displays an important and characteristic symptom. This consists first, in an elevated pitch, her voice frequently shooting up to a very high key; second, a tendency to loudly accentuate a syllable

at short intervals; third, in a continuation to speak during inspiration as well as expiration. These *vocal mannerisms* have been present in varying degree throughout the present illness.

One observes in listening to her phrase production, (conversation it cannot be called) that a deep-seated lesion exists in the associative faculty. To questions she is either mute, replies irrelevantly, or answers by asking another question, commonly enough applying a string of random insulting epithets to the questioner, without showing, however, the slightest feeling in the matter. To a request for her name she replies: "I haven't any," and when the question is repeated, says, "Would you like to hear me sing? Tra-la-la." If we ask her how to write her name and address upon the board, she does so promptly and correctly, and in the action shows that her handwriting is practically normal. Her age she maintains to be one year, but when the date of her birth is called for, she replies correctly, May 2, 1872; adding that she belongs to the Aryan race. The phenomena of *negativistic* or *irrelevant response* has become crystallised, so to speak, through long habit, and constitutes in this patient the usual reactional mode. Occasionally, however, she startles us not only by her ready and accurate replies, but by an unmotived and colorless sarcasm which may not be unembarrassing for her audience. In her general manner of reaction to address, we have therefore the most striking contrasts, and this is an essential feature of the psychosis.

In her spontaneous outbursts of language the most heterogeneous associations occur. Among them it is often utterly impossible to discover any connecting links; sound and rhyming associations frequently play, however, a conspicuous part. It is easy to see that these bizarre assemblages of phrases do not as a rule follow as a sequence to external stimuli, but are rather the result of inner suggestions, representing, as it were, a series of spontaneous flash-light appearances in consciousness, ideational fragments which appear and disappear without rising to the dignity of a "train of thought." This *ideational fragmentation* is further indicated by the sudden breaking off of an initiated thought-process, and the apparently spontaneous succession of an entirely unrelated idea which may likewise be left incomplete. Thus the patient's

associational fabric presents a true mosaic, in which the various elements show for the most part no other relation to each other than that of contiguity.[1]

Conspicuous in the patient's ideational processes is the frequent evidence of the remains of a previously acquired education, and it soon becomes apparent that we have to do with a young woman who has enjoyed a considerable degree of culture, although her present appearance furnishes little indication of that fact.

If casually observed during her spontaneous and uninterrupted *logorrhœa,* one might perhaps at first suspect a maniacal flight of ideas. This assumption is negatived, however, by the fact that her ideas do not form a connected chain, but for the most part simply a number of dissociated links; further by the circumstance that her attention is not particularly divertible or easily caught by the objects of her environment; and finally, by the impulsive quality of her outbursts of phrase-forming. These may occur spontaneously or as the result of any stimulus whatever, and continue several minutes or a half hour, subsiding suddenly. The patient then sinks into a condition of indifferent uncommunicativeness, remaining quietly and silently in her chair.

Another symptom which characterizes her mental state is the occurrence of *stereotyped movements* and *phrases.* Thus she frequently makes motions in the air as if striking the keys of a musical instrument, or remarks from time to time, "I must go and play on the piano." Here, too, is a survival from her early life, as we learn from the history that the patient was a somewhat gifted musician. For a long time she had the habit of laying her index finger to her lips whenever she was asked a question.

As we listen to her replies to questions or her spontaneous expressions, we are particularly struck by the absolute lack of color of all her thought processes. We have here to do, in other words, with a complete emotional dulling, a real *affect-dementia.* As we should expect, therefore, there is very little change in her facial expression accompanying her mental operations. The patient never utters a sentiment of joy or of sorrow, of hope, fear or de-

[1] The picture may be well described in a sentence of PINEL in his remarks on dementia: "Les idées sont comme isolées, et naissent les unes à la suite des autres; mais elles ne sont nullement associées, ou plutôt la faculté de la pensée est abolie."

sire, and her countenance never in the remotest reflects any of these feelings. On the contrary, deep mental deterioration is depicted in every lineament. As she sits in her chair she presents the picture of absolute apathy. To threats, compliments, insults, she is alike indifferent. We observe, nevertheless, at times a superficial affect display in a slight attack of tears, more rarely laughter, and occasionally irritability; but these states are very transitory, do not depend upon any demonstrable external cause, and are characterised by the unexpectedness and inappropriateness of their appearance.

As the patient sits before you, you observe in her facial musculature signs of a spastic condition which was previously very marked. This is seen in both forehead and lips. The central third of her forehead she wears habitually corrugated, and her lips are always tightly pressed together so that the under lip is nearly concealed. This symptom ("*snout-spasm*") was mentioned by KAHLBAUM as an expression of the general increased muscle tension which constitutes an essential feature of the disease-process described by him as Katatonia, the terminal stage of which our patient presents.

Such in general is the symptomatic picture. Consulting the history we learn that there have been *two previous attacks* of alienation, from each of which recovery is said to have taken place. The first attack came at the age of eighteen, up to which time the patient had been well, excepting irregular and painful menstruation. At the time of her breakdown she was an industrious student of art and music, and was believed to have exhausted herself through over-study. The initial mental symptoms developed in the spring after a winter of hard study. The patient became irritable and depressed and gave way to crying spells, which were sometimes replaced by unexpected laughter. Later, carelessness and indifference, neglect of her person, obstinacy and resistiveness showed themselves. Then came disorientation, suspiciousness, delusions of poisoning. Her illness lasted probably about nine months, five of which were spent in a hospital for insane.

The second attack is said to have begun about a year and a half after the alleged recovery from the first. The patient was at this time twenty years old. Here again the only etiologic factor which

the family could assign was over-work. The disease-picture appears to have been fairly similar to the original one, the psychosis was, however, of a severer type and its duration longer, continuing at least fifteen months, most of which time was spent in the hospital.

Between the second attack and the present final one, six years elapsed.

The mental symptoms of the third attack, as in the case of the second, developed gradually during the autumn months, and were accompanied, and doubtless preceded by signs of failing physical health, lack of appetite, loss of weight, insomnia, headache. The patient's age was twenty-eight.

The chief point of interest in the development of this case is the fact that during the first two attacks, the diagnosis of "acute mania" was made at the hospital where she was treated. Furthermore, she was both times discharged recovered. The present diagnosis of Dementia Präcox indicates an essential change in the clinical viewpoint. It has been established that conditions of excitement ending in pronounced mental reduction are distinctly different in their clinical manifestations from the so-called functional exaltation of acute mania. According to the earlier view, it was not at all disconcerting that a case put down as acute mania should terminate after a short or long interval, with or without remission, in profound dementia. The condition was then spoken of as post-maniacal or *terminal dementia*, (démence vésanique), and this terminal dementia constituted a veritable slough of despond into which almost any psychosis might eventually be swallowed up. The differentiation between the phases of excitement of dementia präcox and those of true mania, has supplied prognostic indications of the first importance. When the patient was admitted to this hospital five years ago, the symptoms of excitement in the wide sense, violence, aggressiveness, destructiveness, logorrhœa, were in the foreground as they had been during the previous attacks. At the same time many of the symptoms which you have to-day seen demonstrated were also then present and left no doubt as to the nature of the disease-process or of its probable outcome. At the time of the beginning of the illness, however, the lines were less sharply drawn than at present between dementing and non-dementing processes, and the primary

dementing psychoses in young people were, in this country, seldom differentiated from other conditions. It seems probable that the improvement noted during the course of the initial attacks was chiefly on the physical side; the patient was built up on tonics, the active symptoms gradually subsided and were replaced by a quiet inertia which was looked upon as an improvement mentally. The early case records nevertheless show that certain of the symptoms which are now demonstrable and looked upon as characteristic, doubtless existed also in the first illness, although their diagnostic value was overlooked. Only twenty-six days before the patient was discharged "recovered" from the first attack it was noted,—"Patient now weighs 124 pounds. Weight on admission (4 months previously) was 93 pounds. Seems to have given up her delusions (poisoning), and is cheerful and hopeful, *but appears rather feeble-minded.*" (Dec. 20, 1890).

That her general condition was improved is unquestionably true: that she regained complete mental health is at least extremely doubtful. Moreover, during the year and a half at home between the first and second admissions, she gradually lost all the flesh she had gained, and a little more.

In the records of the second admission decidedly suggestive entries also occur. The patient is described as "indifferent, silent and unemployed." She "occasionally strikes others, and at times breaks dishes." (*Impulsive acts*). It is noted (April 4, 1893), that she "has the delusion that someone makes her have fits." (*Symptom of external control*). She wrote in a letter to her mother, "I am eating dead men in their graves. I just love to eat them." (*Dissociation of consciousness*).

The patient has been in this hospital five yeafs, during which time she has passed through practically the entire scale of symptoms which may be encountered in a typical case of dementia präcox. The *idea of external control,* associated with *impulsive acts,* was especially in evidence during the earlier part of this period. Her sudden, jerky, irresolute, bizarre and meaningless acts she would repeatedly accompany by the phrase, "I must." The subjective representation of freedom of conduct was unmistakably lacking. This feeling of external influence is sometimes most distressing to patients. They are forced by hostile individuals or mechanical devices, or unseen and mysterious agencies

to perform deeds without their consent, or in direct opposition to their will; indeed every trivial action of every-day life may be so regulated,—the patient is "made" to move in this way or that, to raise his hand to his brow, to look in a certain direction, to breathe, to wink, to utter such and such words. The feeling of absence of personal volition may be so complete that the patient seems in his consciousness only a helpless spectator both of the acts of his body and even of the workings of his own mind.

A symptom common to this form of alienation, that of *perverted syntax* and *word-coining*, has from time to time been conspicuous in this case. For several months she began nearly all her sentences with "me" instead of "I" as the subject. She has frequently spoken indifferently of a desire to become "uncrazed." For a while she would often several times repeat the initial syllable of the first word of her sentences.

The *ideational dissociation* and *bizarrerie* with frequent tendency to apparent facetiousness are further illustrated by a few of her replies or spontaneous expressions. Once while struggling with her nurse she suddenly exclaimed, "Two mad dogs fighting. Please take me to a Pasteur Hospital." On one occasion she remarked that she was a graduated physician and could cure anybody's mind, provided that she had her own. For a considerable period her common reply to questions was, "That is none of your mad-dog business," thus using a reversed form of profanity quite in keeping with her usual perverted expressions. One evening she knelt by her bed and made an affecting prayer, immediately after which she jumped up and exclaimed: "What in the name of Hell is the use of my saying that God damned foolishness?" Later she observed that she was an Easter lily and would come up every year instead of every leap-year. One day she demanded with a slight show of impatience, "How long am I to suffer for the insanity of my left foot?" and on another occasion remarked to her nurse: "Why I am in this condition you shall never know unless I or God let you into the secret." Recently she observed gratuitously,—

"I don't think I'm adapted to teaching,
So I believe I will go to screeching."

She admits having composed music and poetry, asks if we wish to hear her sing, and desires to know further whether we under-

stand the difference between "a demi-semi-hemi-quaver and a hemi-semi-demi-quiver." All of these remarks she utters with entire indifference and without change of facial expression. In her isolated spontaneous expressions it is often impossible to discover any associative connection whatever,—

"I do not want to sit in the man in the moon's lap."

"I want to go to the Coral Islands and take a bath."

"I am going to eat my way out of hell."

"I must go and kiss God."

Frequently during the course of the psychosis, the patient has displayed a definite *child-reaction*, saying and doing things quite after the manner of a child of six or eight. Eating has been her chief delight, and her prehensile methods have necessitated her isolation during meals. She enjoys playing with the pebbles by the brook, writes letters to Santa Claus and hangs up her stocking.

A symptom much more in evidence formerly than at present was a purposeless, colorless *erotism* which manifested itself in clumsy attempts to embrace or kiss anyone who came near her. She would often ask to be kissed, and with the same emotion with which one might enquire about the weather, accompanying her request with very unattractive grimaces. She would disrobe irrespective of time or place and has been given to excessive reflex masturbation. This was a very conspicuous symptom at the beginning of the patient's illness fifteen years ago, and has been constant throughout.

During the winter of her first year in this hospital, the patient passed through an exquisite *katatonic phase*, in which were present stereotyped acts, posturing, mutism, negativism, sudden irrelevant impulses, with general muscular hypertonus and exaggerated tendon reflexes. Phases of *stupor* alternated with those of incoherent *excitement*. During the latter she was constantly active, and as a rule indeed, the most disturbing element on the ward; during the former she lay in bed inactive and inaccessible. With fixed vision she would gaze at a spot on the ceiling for hours, apparently utterly oblivious of her surroundings. Unnatural attitudes, sometimes spontaneously assumed, sometimes the result of suggestion, would be maintained unchanged for a half hour or even longer.

The *negativism* which the patient displayed during her katatonic stage was aptly described by her nurse in these words: "She tries to do the opposite of what she is asked to do. When taken to be weighed, resisted, and when asked to come back afterward, also resisted. Has to be forced to eat, clenches her teeth and does not give in till the spoon is forced into her mouth. Will not go to the closet, and retains urine for long periods."

The fundamental *lesion of the will* which underlies the various katatonic phenomena mentioned manifested itself at this time in a degree of psycho-motor indecision, a lack of orderly initiative and conclusion, unequalled in any other condition. She would appear much perplexed, for example, to know whether to sit or to stand, would gaze at a chair, start hurriedly toward it, interrupt her course suddenly, take a few uncertain steps, and then go quickly to another chair. Reaching this, she would begin the movement of sitting down, stop in the midst of it, and remain for some seconds in the far from comfortable position between standing and sitting, unsupported by the chair. Indecision and incompleteness characterised all her acts, while on the psychic side the same fundamental lesion was apparent in the interrupted thought processes and incompleted sentences which have already been mentioned. In the affect sphere, finally, states of consciousness resulted which might superficially suggest ideas of scruple.

The *menstrual curve* is particularly interesting in showing the relation between this function and the various phases of the psychosis. During the first part of the curve, comprising nearly two years after the patient was admitted to this hospital, menstrual periods were frequently missed, and occurred at extremely irregular intervals. These two anomalies are common enough in cases of katatonia. However, since the active excitement and katatonic symptoms have fairly subsided, the menstrual function has become absolutely regular, occurring every month without fail and at the normal interval, although usually somewhat diminished in amount.

As regards the *ancestry* of our patient it may be mentioned that her paternal grandfather and a paternal uncle each passed through a recoverable psychosis, the nature of which is not known. Another paternal uncle was an imbecile, while a paternal

aunt suffered with chorea. The mother's family history, so far as can be learned, is clear.

The patient herself, as will be observed, is a girl of very short stature (152 cm.). She presents the stigmata of hypertrichosis (eyebrows over bridge of nose; angles of upper lip), and a wide longitudinal palatal torus. The tendon reflexes are now all diminished. The pupils are usually unequal in size, the left being as a rule distinctly larger than the right; their outlines are slightly irregular, a common finding in dementia præcox. On exposure to light they contract rather sluggishly but with fair excursion. The body temperature is usually slightly subnormal (ca. 97° F.,) and the pulse and blood pressure are about normal, both having been somewhat higher during the katatonic stage.

As we see the patient before us, she is utterly degraded in every particular. All sense of modesty and shame has been absent throughout our period of observation. She has absolutely no regard for her personal appearance, is extremely filthy in her habits and is given over to the most disgusting practices (gâtisme, urodipsia, urobagnia, coprophagia, manu-pedestupration.) Nothing that can be said to her makes the slightest impression, so far as her feelings are concerned. She leads a vegetative automatic existence, interrupted by occasional, sometimes violent impulses, and in this condition we shall expect her to remain until carried off by some accidental infection, perhaps in old age.

Following is recorded a *causerie* of one of the patient's more accessible moods (April, 1906). Her part of the dialogue was uttered fairly reflexly, without the slightest show of feeling and with no change whatever in her set, almost expressionless features.

(Dr.) How are you to-day?
(Pt.) I'm well.
(Dr.) I should like to ask you a few questions.
(Pt.) I don't want to answer turkey buzzard's questions.
(Dr.) How old are you?
(Pt.) As old as my tongue and as young as my teeth. How old are you? You are an old hog out of the field. How did you get in the house?
(Dr.) Do you know me?
(Pt.) Why, yes. You're either a young hog or a petrified cannibal.

(Dr.) And this lady? (indicating a nurse).
(Pt.) That's a poor insane woman.
(Dr.) And this gentleman? (indicating another physician).
(Pt.) Why, pig, p-i-g; pig, pig, pig, pig, pig (uttered in quick succession after the manner of calling pigs to dinner).
(Dr.) Why are you so insulting?
(Pt.) I don't want to move off the parlor chair.
(Dr.) What is your Christian name?
(Pt.) (Gives her whole name correctly, adding her address in detail.) I want to go home in that carriage. Angels will drive up for me.
(Dr.) Do you pray every night?
(Pt.) Now that's the ugliest question you can ask me.
(Dr.) Why not?
(Pt.) (Mute.)
(Dr.) Are you hungry?
(Pt.) (Shook head.)
(Dr.) Would you like to go out?
(Pt.) (Shook head.)
(Dr.) What do you want to do?
(Pt.) I want to sit in the parlor where I belong. I want a pair of pants like yours.
(Dr.) You are a poet, aren't you?
(Pt.) I am a splendid poet in my own way. Now I am a very fine poet.
(Dr.) Will you say a little?
(Pt.) I have no poetry to say to you. I don't want to say it over to sneaks like that.
(Dr.) Do you go to Sunday School?
(Pt.) No, do you? Your poetry is so poor I can't read it. It's second sight or something like that. I could not read your poetry. On the guitar you are such a poor performer. I am not such a poor performer. I would like to play Miserere.
(Dr.) What time is it? (showing watch).
(Pt.) Half-past eleven or quarter of twelve. (Time was 11.20.)
(Dr.) (Repeats the question.)
(Pt.) Do you know Bonnie Annie Laurie? Do you know how to sing? That's a flaunting weed. Two flaunting weeds came bursting in my room.
(Dr.) Do you want to go home?
(Pt.) Yes.
(Dr.) Why?
(Pt.) I think it would be the worst place for me.
(Dr.) What do you want to do when you go home?
(Pt) Play. I want to be an angel instead of playing here. No, I want to go walk the streets of Baltimore. I want to go out

to buy some things for myself and for other people. I would not want to go into a young man's room and ask him if he wanted anything for his children.

(Dr.) Are you playing angel now?

(Pt.) Well, I don't know. I want my supper. I want something to eat. It's right to eat; if not, it's wrong.

(Dr.) Do you love the Lord?

(Pt.) No, because Willie went away and left. He was not sane.

(Dr.) What would you like better than anything else in the world?

(Pt.) To sit on the parlor chair.

(Dr.) Do you know what day this is? (13th April).

(Pt.) The fourteenth of November.

(Dr.) Do you know that to-day is Good Friday?

(Pt.) No, it is not. I suppose you go wherever you are included, if you came across a Kickapoo Indian. A hog with no morals would not move me off that chair there.

(Dr.) What is next Sunday? (Easter).

(Pt.) When it comes it will be Sunday.

(Dr.) What time of year is this?

(Pt.) I don't know.

(Dr.) Is it winter?

(Pt.) I guess not.

(Dr.) Is it summer?

(Pt.) I guess not.

(Dr.) Is it autumn?

(Pt.) I guess not.

(Dr.) Is it spring?

(Pt.) I guess not.

(Dr.) How many are 9×7?

(Pt.) 63.

(Dr.) 7×8?

(Pt.) (Mute.)

(Dr.) 7×7?

(Pt.) 94.

(Dr.) Do you know the President of the United States?

(Pt.) No.

(Dr.) Who do you think it is?

(Pt.) Why, I am the President of the United States. I was once upon a time.

(Dr.) What is the name of the President?

(Pt.) Why, George Washington.

(Dr.) The President now?

(Pt.) They don't have any President of the United States. They have a whole lot of fools up in the Senate—stand up and squeal like so many fools.

(Dr.) What do they have in place of a President?

(Pt.) A hog. Twelve idiotic statesmen. Fourteen idiotic statesmen. I don't like to talk to a skeleton. Women are fools. People used to keep quiet in church. There are certain rules.

(Dr.) What are you?

(Pt.) What am I? A package of daffodils. I am in heaven.

(Dr.) Is this heaven?

(Pt.) No, not here.

(Dr.) What then?

(Pt.) Hell—or hail.

(Dr.) Where is heaven?

(Pt.) (Mute.)

(Dr.) Have you ever seen God?

(Pt.) Yes, I see him whenever I look in the glass.

(Dr.) Where were you before you came to this hospital?

(Pt.) (No reply at first.) I wish the horse would go home and not ask me with their hoofs.

(Dr.) How old are you now?

(Pt.) I am very young. Quite ready to be brought to the table this evening. I am not as old and ugly as Lillie Hopkins.

(Dr.) What place is this?

(Pt.) The bad place.

(Dr.) Will you say your prayers?

(Pt.) Our Father which art in heaven, hallowed be thy name; thy kingdom come, thy will be done, on earth as it is in heaven. Give us this day our daily bread. I don't care to say it to every dog or hog that comes along. I don't care to move off the parlor chair. I had a little daughter once. They called her daughter. P-i-g spells,—why pig is a man, a man-eater, a pig, an idiot.

(Dr.) What does d-o-g spell?

(Pt.) Dog, when it is spelled.

(Dr.) Are you a dog?

(Pt.) No, I am a school teacher.

(Dr.) What is your religion?

(Pt.) Why, a gentile. (Pt. belongs to Society of Friends.) I believe it's right to eat. I would like to come in and eat my supper. What do you think made me insane? I am sure it has been made to jump off the parlor chair. Maid of Athens, e'er we part, give, oh give me back my heart. Don't let us part. Won't you bring in some lettuce, please? You have no right to set the French language. How did you dare to set the French language? How would a Dutchman dare to set the French language?

(Dr.) Have you ever been married?

(Pt.) No, sir; I never had any desire to marry a man like you. I never could find any one worthy of me.

(Dr.) Are you familiar with the history of the United States?
(Pt.) I wrote part of it.
(Dr.) Will you repeat some of it?
(Pt.) I can't. I never saw a history in my life.
(Dr.) Who discovered America?
(Pt.) I discovered it.
(Dr.) (Repeats the question, severely.)
(Pt.) I didn't do it intentionally.
(Dr.) When did you discover America?
(Pt.) It was in 1808 instead of 1492, like it is written. (A period of mutism followed, during which patient would give no response to any question).
(Dr.) What is the largest city in the world?
(Pt.) New York.
(Dr.) The oldest city in the United States?
(Pt.) St. Augustine, Florida.
(Dr.) How old is it?
(Pt.) Quite an old city.
(Dr.) When was St. Augustine founded?
(Pt.) Fourteen hundred and ten years ago?
(Dr.) Which is the longest river in the world?
(Pt.) The Mississippi.
(Dr.) How long is it?
(Pt.) Ten miles from one end to the other.
(Dr.) What language do you speak?
(Pt.) I never speak any language of anger unless there is cause. Anger. Languor. L-a-n-g-u-o-r. Languor.
(Dr.) What is the first book in the Bible?
(Pt.) Genesis is the first book that I wrote. It is right to eat the fruit that was said to be forbidden fruit by the insane.
(Dr.) Would you like something to eat?
(Pt.) No. It's not a very decent thing to do. I'd rather starve than eat with the lowly.
(Dr.) Have you any money?
(Pt.) No, not since you robbed me of it, you old orang-outang. I don't wish any red dress—a pretty blue dress. One for myself and one for my child.
(Dr.) Have you a child?
(Pt.) Yes.
(Dr.) But you are not married.
(Pt.) Single women can have children.
(Dr.) How long have you been here?
(Pt.) I have stayed here. They tell me to stay. (Turning to the stenographer) What dirty, low Dutch cabbage you are!
(Dr.) Why did you come here?

(Pt.) You know how to say, "I have indeed?" Do you understand the French language? *Avec* is the word one uses to shield their dishonesty.
(Dr.) Do you know the Apostles' Creed?
(Pt.) I am the author of the Lover's Creed. I am the Maid of Athens.
(Dr.) Who was Napoleon?
(Pt.) I am Napoleon—Bonaparte. Why did you come to insult me?
(Dr.) What is that noise? (a patient screaming in a neighboring room).
(Pt.) It's Topsy, very likely, playing on my piano.
(Dr.) Who is your favorite author?
(Pt.) I am my own favorite author.
(Dr.) Who was Cæsar?
(Pt.) I am Cæsar.
(Dr.) Who was Cleopatra?
(Pt.) It is not best to ask Cleopatra who was Cleopatra. I didn't want to get off the sofa. What a fool you are!
(Dr.) Why do you insult me?
(Pt.) You deserve to be insulted. I deserve to lie on the sofa quietly. I deserve a taste of preserves.
(Dr.) Do you like birds?
(Pt.) Sweet memory nocturn.
(Dr.) Do you know who Shakespeare was?
(Pt.) I am he.
(Dr.) What did he write?
(Pt.) He wrote all of Shakespeare's books, a decent book, and a part of the Bible.
(Dr.) Do you know Faust?
(Pt.) (Mute.)
(Dr.) Did you ever see Mephistopheles?
(Pt.) I see him now. (Looking at the doctor.) He has poked himself into the same room with me.
(Dr.) Shall we end the interview?
(Pt.) Yes,—whatever that is.
(Dr.) Good-bye.
(Pt.) Please don't leave me there alone.
(Dr.) Shall we call again?
(Pt.) No, I have nothing for you. I was not going to give any presents this year. I had none to give.
(Dr.) Whom would you like to see?
(Pt.) I would like to lie on the sofa quietly.
(Dr.) Good-bye.
(Pt.) Good-bye. (Attempting to snatch book from doctor's hand.) Shall I eat that book? May I please eat that book?

Correspondence

STOCKTON, CALIFORNIA, April 22, 1906.

EDITORS AMERICAN JOURNAL OF INSANITY:

Your telegram did not reach here until yesterday,[1] and you will no doubt wonder why there has been such a delay to answer, but as I was told by the operator yesterday that my telegram would have to be sent by express to Salt Lake City, to be telegraphed thence to Baltimore, I shall expect you to receive it to-morrow or the next day. In my telegram I said Agnews Asylum was the only one of the California asylums damaged, but to-day I learn that the towns along the northern coast have suffered much, and as Ukiah Asylum is not far from the coast I fear it may have been damaged.[2] There is only one railroad (small terminal road) and telegraph connection with it and no news has yet been received. The earthquake, it seems, extended along the mountainous border of the San Francisco Bay on each side of Golden Gate, and did much damage at San Francisco at the end of the peninsula on the south of Golden Gate and at San Jose, situated at the extreme southern end of this bay, as if there were a certain relationship of the severity of the earthquake to the western boundary of the bay bottom.

I was not in Stockton at the time of the earthquake, having gone to San Francisco to attend the meeting of the California State Medical Society, April 17-20. I was asleep in the fourth story of the California Hotel (an eight-story building) when the shock came. The disastrous effect and the fire following it you have no doubt heard about through the papers. The Stockton Asylum felt the shock but was not in the least damaged and no appreciable effect upon the inmates has been observed. Not so

[1] This telegram was sent April 19th, and accepted by the Telegraph Co. "subject to delay."

[2] Later information shows that the buildings at Ukiah were damaged but not seriously.

with the asylum at Agnews. This institution was built in 1888 upon land purchased in a swampy district about six miles from the city of San Jose (now having a population of 25,000). At the time the land purchase and the plan of the building were criticized, and the former spoken of as a political job. Since then they have had trouble with their sewerage and cemetery, which latter in rainy years required filling up five or six feet to allow digging of graves. The institution had a central administration building with two wings (erected on the old plan). The center (a brick and stone structure) had four stories with an immense cupola or tower set back some distance from the front of the building. When the earthquake came this tower was seen by employés on the outside to move with a slight rotation from side to side and finally to fall backwards, crashing through the four stories to the basement and carrying most of the building with it, leaving the front rooms standing. An assistant physician, Dr. Kelly, and the woman physician were killed. The former had his neck broken and was found embracing his wife and young daughters—the latter were severely injured. The supervisor (who was killed) was sleeping on the first floor when the three stories and the tower fell and carried him to the basement, where he was found sitting up in bed with a timber across his head and chest. The porter, stenographer, four waitresses, and three male and female nurses were likewise killed; one of the former was thrown from the third story out of the building to the lawn and was found there dead, lying on his bed. A female nurse was found alive but severely injured with a wardrobe and six dead bodies lying on top of her, the wardrobe carrying the weight. The ends of each wing received the greatest damage and the stairways were wrecked and made impassable. In one dormitory, containing fourteen patients, every one was killed. Every building connected with the asylum has been so badly wrecked that it will have to be rebuilt from the ground up. Even the four small cottages were wrecked; in one of them two patients were killed. The tall smoke-stack and kitchen were wrecked so that cooking had to be done in one of the yards. The food supply was abundant after the earthquake, the patients receiving a good dinner and supper. There was very little immediate excitement after the

shock, only one woman, who was locked up in a room, was heard to scream. No marked case of hysteria developed; everybody was quiet, no noise was heard on the grounds, except moaning among the injured in the hospital tents. Some of the feeble cases appeared to be no more feeble after than before the shock. Only the next day after the patients had slept out of doors did restlessness show itself.[1]

The effect of the earthquake upon the nervous system of the insane was similar to what I observed among the people of all classes in San Francisco during the following two days. The catastrophe seemed to make men, women, and children dazed, they walked about as if in a mild degree of dream-state, showing the effect of the shock in haggard, expressionless faces. No emotional outbursts did I observe among thousands, even the children did not seem to cry, and very few women were seen to shed tears. The after-effect will in all probability be different. The calamity seemed, however, to have a different effect upon the people in the surrounding country who did not go through the terrible ordeal. They have shown the usual excitement of a hysterial nature, especially expressed in the lying and deception met with in the numerous silly and false rumors pouring out in all directions.

It was fortunate that nothing happened at this institution where one of the buildings (the female department) is a four-story structure of very old plan of construction with numerous narrow and deviating corridors.

Sincerely yours,

ANDREW W. HOISHOLT.

[1] Dr. Hoisholt's telegram referred to above says of the Asylum at Agnews: One hundred and ten dead removed from ruins, among them twelve employees, two doctors. Seventy severely injured—broken bones, crushed limbs, fractured skulls, and partially removed scalps. One hundred slightly injured. No maniacal or hysterical excitement of injured so far. Stockton received one hundred patients; remainder in tents.

Obituary

DAVID DORRINGTON RICHARDSON.

Dr. David Dorrington Richardson, medical superintendent of the men's department of the State Hospital for the Insane at Norristown, Pennsylvania, died March 6, 1906, of angina pectoris. Dr. Richardson was the son of Major George Park and Sarah Ann Richardson and was born in Richmond, Virginia, May 11, 1837. His medical education was obtained at the Transylvania University, Lexington, Kentucky, where he graduated in 1858. He afterward took a course in medicine at the University of Pennsylvania, and graduated from that school also. After serving as interne at the Howard and Philadelphia hospitals he was appointed resident physician at the Northern Dispensary, Philadelphia, in 1861, the institution being under his entire charge. Subsequently he received the appointment as superintendent and physician-in-chief of the department for the insane, Philadelphia Hospital, where he served for a number of years. In 1879 he was appointed superintendent of the State Hospital for the Insane at Warren, Pennsylvania, which was about to open its doors for the reception of patients, and he organized that institution. He was soon recalled to the Philadelphia Hospital, however, where he served until 1886, when he left to go into private practice. After serving as superintendent of the Delaware State Hospital at Farnhurst from 1889 to 1893, he resigned to take charge of the men's department at the State Hospital at Norristown, a position which he held during the remainder of his life.

In spite of the exacting demands of institution life Dr. Richardson found time to devote to study and was an earnest student to the end. He was the author of several books and pamphlets, among which are "Chemical Remembrancer" (1861), "The Old and New Notation of Chemistry Reconciled" (1876), and "Clinical Lectures on Insanity" (1885). In his earlier years he was

demonstrator of anatomy in the Philadelphia School of Anatomy, and from 1886 to 1890 in the University of Pennsylvania.

While his death was sudden he had been a sufferer from a heart affection for several years although it had not interfered with his work. He married in 1860 Margaret Spear Hancker, who died in 1894.

Dr. Richardson was an incessant worker, a man of the highest ideals, and one who had earned the respect and affection of all with whom he was associated. His sympathy and tenderness towards his patients was unfailing and his death will be keenly felt by them.

M. G

Notes and Comment

THE CALIFORNIA EARTHQUAKE.—The dreadful catastrophe which has overwhelmed San Francisco, and some of the adjacent towns has appealed to the sympathy of the whole world, and awakened a prompt and generous response which is a most gratifying illustration of the common brotherhood of man.

To members of the medical profession the direful position in which many of their professional brethren have been placed by the earthquake or the fire which followed will, we are assured, appeal with particular force, and we trust that those who are able will respond to the appeals which are being made by committees in New York, Chicago and elsewhere.

Many medical men have lost not only their homes, but books, instruments, records of cases, and of particular importance to them financially, their records of accounts with their patients, so that it will be very difficult, and in some cases practically impossible to collect the fees due them for services rendered. Not only is this true, but their patients like themselves have been the victims of disaster, and their homes and places of business having been destroyed, are scattered far and wide, and are therefore inaccessible. As the city is rebuilt, which we assume will be the case, changes in the character of portions of the district affected will no doubt result. Residence quarters will be given up to business, and *vice versa*. Many families will remove to other portions of the city or no doubt in many instances to other towns, and the physicians who counted them among their patients will be compelled to slowly gather another and different list of patrons, so that many old practitioners will find themselves facing the situation which confronted them when years ago they commenced to practice. This will be true to some extent also of some physicians who did not reside in the destroyed area, but whose practice was to some extent in the district involved.

The almost total destruction of the State Hospital at Agnews with the deplorable loss of life, and serious injuries to many who

survived is graphically portrayed in a letter from Dr. Hoisholt, of the hospital at Stockton, which will be found elsewhere in the JOURNAL.

We hope in a future issue to give further details of the destruction of this hospital and possibly some account of the general psychical influence of the earthquake, which has been briefly touched upon by Dr. Hoisholt.

THE BOSTON MEETING.—The sixty-second annual meeting of the American Medico-Psychological Association which is to be held in Boston, June 12th to 15th inclusive, promises to be one of more than usual interest. A list of papers promised presents a varied and interesting programme, and we trust that the members will not only attend the meeting, but be prepared to discuss the topics suggested by this list with a view to adding to the interest and value of the meeting.

Boston presents to the medical visitor many points of interest, and this year, the attractions are more than ordinary. In addition to our own association, no less than seven other medical bodies convene in that city between the first and fifteenth of June. The American Academy of Medicine meets June 2-4, The American Gastro-Enterological Association June 4, the American Neurological and the American Urological Associations June 4-5, the Proctological, June 5-6, the American Medical Association, June 5-8, and the Massachusetts State Medical Society, June 12-13.

It will be seen that for those who desire there will be no lack of meetings to attend, and much that will be no doubt of great medical value will be presented at these meetings.

Concessions as to rates of travel have been made by the railroads, and Dr. Tuttle, chairman of the Committee of Arrangements, has mailed a statement of these to each member of the Association.

NEW FRENCH MEDICAL PERIODICALS.—It is not often that a publisher enters simultaneously upon the publication of two periodicals in the same field of literature, and rare indeed that one launches three at practically the same time. We have, however, to record the reception from the publishers, H. Delarue et Cie, of Paris, of the first numbers of "L'Encephale," a journal of psy-

chiaty bearing date of January-February 1906, of the "Revue de Médicine Légale Psychiatrique et d'Anthropologie Criminelle," dated February, 1906, of "L'Informateur des Aliénistes et des Neurologistes, Journal d'Informations, d'Intérétes professionnells et d'Assistance," issued in March of this year.

The initial number of L'Encephale contains 54 pages of original articles, 2 pages of book review, and 52 pages of abstracts of current literature. The introduction gives the reasons for the foundation of a new journal and defines the policy of devoting its pages chiefly to the exposition of mental pathology, or in other words making it a journal devoted to a specialty in medicine.

It is assumed that there is room for such a journal and the success of this venture should be well assured as it is edited by A. Antheaume and M. Klippel, assisted by G. Ballet, E. Dupre, P. Keraval, E. Régis, P. Serieux, and Ch. Vallon, all of whom are known as diligent workers in the field of mental pathology. The death of the last-named gentleman since the publication of the first number of L'Encephale, as the result of an assault by a patient, is much to be regretted.

The Revue de Médicine Légale Psychiatrique contains but 48 pages, divided as follows: a 2-page introduction; 16 pages of original articles by Régis, Serieux, and Jeanselme; 16 pages of discussion of two criminal cases by Dupre and Vallon; 2 pages of a court report; the remainder of this number being given over to abstracts, reviews, and notes. The number is an extremely interesting one and this is the first journal in France, at least, to be devoted to psychiatric medico-legal questions. The French have long occupied an advanced position in dealing with questions of legal medicine, and the publication of a journal devoted especially to psychiatric jurisprudence will, we feel certain, receive, as it should, hearty support.

Mechanically these journals are superior to most of the foreign periodicals, the publishers, *Delarue et Cie* not having economized to the detriment of appearances, the pages having good margins and being clearly printed on good paper. The phototype illustrations in *L'Encephale* are admirable.

L'Informateur des Alienistes et des Neurologistes is published monthly and is devoted to matter of local interest such as ques-

tions of administration, appointments, promotions, resignations, necrology, etc. The initial number opens with appreciative note on Ch. Vallon, who was recently killed by a patient, a number of notes of the character indicated above, abstracts of two meetings of the *Société Médico-Psychologique,* a paper entitled *La question des retraites pour des médicins des asiles d'alienes,* a brief description with ground-plan of the asylum at Alt-Scherbitz, a book review, and an announcement of the congress to be held at Lille during the first week of August, 1906.

All of these journals form a welcome addition to our reading table and we hope that the high standard which has been set in these initial numbers will never be lowered.

Notes on New Books

Handbook for Attendants on the Insane. Published by the authority of the Medico-Psychological Association of Great Britain and Ireland. Fourth Edition. London, Baillière, Tindall & Cox: Chicago, W. T. Keener & Co.

That the above book has proven of service is testified by the fact that a fourth edition is issued, and an examination of the work shows why this has resulted. The book comprises 158 pages, 49 of which are devoted to Anatomy and Physiology, 16 to Symptoms of Disease and Disorder, 18 to Mind and its Disorders, 34 to Nursing of the Sick, 15 to the Care of the Insane, 10 to General Duties of Attendants, and the remainder being an appendix giving the Rules of the Association for the Examination of Attendants, and an index and glossary. Surely much is crowded into these few pages, but it is expressed so simply and clearly that the beginner can have no difficulty in easily comprehending what is set forth. At the end of each chapter there is a most searching set of questions which it is impossible to answer without having fully understood what goes before. Moreover, it is intended that this book shall be supplemented by other instruction and shall merely serve as a guide or primer.

The question naturally arises whether this book which has been prepared for English Hospitals will be of service in American training schools. This can be answered affirmatively, as the few matters of strictly local application do not detract from the value of the book as a plain, simple guide for those nursing the insane. The specific instructions as to the attitude of the nurse to patient, as to watchfulness, tact, and other essentials, are admirable. W. R. D.

Transactions of the Medical Association of the State of Alabama (The State Board of Health). Montgomery, 1905, Brown Printing Co.

This is a good-sized book of 587 pages, 350 of which are given up to the addresses, and Medical and Sanitary Dissertations and Reports. These papers are of a high order of merit, and their authorship is not limited to those resident of Alabama. No paper calls for special comment here, as none is upon a neurological or psychiatric subject. The association is to be congratulated upon this volume. W. R. D.

Précis de Psychiatrie. E. Régis. Collection Testut. Third Edition. Paris. Octave Doin. 1906. (One Volume—1032 pages.)

A new edition of Régis' well-known Practical Manual of Mental Diseases under a new title should for many reasons arouse interest and find a

hearty welcome among American psychiatrists. Not the least of these reasons is that the author is perhaps of all living French psychiatrists, the one best known to, and most read by, Americans. His classification of mental diseases, familiar to us all, in certain medical schools has been chosen as the best for the uses of the average student, and in several American text-books appears as the representative French system in the exposition and comparison of the nosological arrangements prevalent in various countries. Moreover, the second edition of the original manual was translated into English, under the auspices of the AMERICAN JOURNAL OF INSANITY, by Bannister, of Chicago, and has thus been accessible to many who do not read French with ease.

But chief among the considerations calling attention to this new edition is the fact that it is not simply a re-edition of an old work, but an entirely new book re-published at the expense of an enormous amount of time, care, and effort on the part of the author.

Particularly at this time do our eyes turn eagerly to the new work since we are all aware of the prominent place which M. Régis has held in the psychiatric upheaval which for two years or more has shaken France. We know well the stand which he took when the teachings of Kræpelin began to make themselves known in France, and how he refused to recognize Dementia Præcox as anything more than a rather conglomerate re-arrangement of conditions already described by French authors. We watched with great interest the battle royal which was waged at Pau in August of 1904,* and saw how it resolved itself not merely into a struggle between two rival schools of psychiatry, but into a question of international, French and German, prestige in psychiatric affairs. M. Régis, as champion of French psychiatry, protested against a passive submission to a far too tyrannical German science, and demanded that France should preserve her independence and liberty in psychiatric as in all other affairs.

To mere onlookers it has seemed that pride of nation should be allowed to play only a very secondary, if indeed any part at all, in such a discussion; and it has also at times appeared as though certain French psychiatrists were in danger, by making a stumbling-block of Kræpelin's nomenclature, of losing sight of the real worth of his clinical observations and deductions.

M. Régis, however, is not one of those whose patriotism could so bias as to cause him to turn blind eyes upon the creditable performances of a rival, and therefore if he refuses to accept the views of Kræpelin, it must be that he has, after mature deliberation, concluded that those views are untenable. To his book, therefore, we turn with interest, for there we should expect to find the sober statement of his estimate of the views *pro* and *con*.

It is, perhaps, permissible to quote from a private letter the modest words of M. Régis himself who thus states the objects which he had in mind publishing this new Psychiatry. It is but just, also, to prelude this

*Congress of French alienists.

statement with another to the effect that M. Régis himself denies that he has reached the high mark which he had set for himself, but that, nevertheless, he has done what he could to realize his ambitions.

"I have endeavored," he says, "to *reunite* in this *Précis*, while leaving it in a form and size convenient for the hand, all of the theoretical and practical knowledge of psychiatry actually useful to the student, to the practitioner, to the alienist, to the man of law, and to present that *ensemble* of knowledge in a methodical order and in a form clear and easily read."

To the reviewer, it appears that the author has in reality accomplished his purpose and has written a book in the highest degree practical and useful.

Contents.—The book opens with an historical introduction, a sketch of the progress of psychiatry from most ancient times up to the present moment, divided into four epochs: *the first epoch,* that of ignorance and superstition, anterior to all medical notions, reaching from the earliest period of which the world has knowledge to the time of Hippocrates. *The second epoch, the epoch of ancient medicine* from Hippocrates to the Roman decadence. *The third epoch,* epoch of transition from the early days of Christianity to the end of the eighteenth century; *i. e.,* from Cœlius Aurelianus to Pinel. *The fourth epoch, époque moderne,* from Pinel to the present day. In the resumé of this fourth period one reads with a feeling of reverence the roll call of names of those who have played their parts in the Psychiatry of the nineteenth century. However much the reader must recognize the necessity for, and admire the tactfulness of, omitting from the list the names of those who have made their influence felt in psychiatry but who are yet alive, he must experience a slight pang of disappointment that the author has dodged the responsibility of completing the catalogue.

The *Précis de Psychiatrie* is divided into three parts:

I. General Pathology.
II. Special Pathology.
III. Practical Psychiatry.

Under General Pathology, general etiology, evolution of the psychopathies, and pathological anatomy are treated in three separate articles in the first chapter.

A second chapter deals with general symptomatology and a third, short one, with classification.

It is this third chapter of but six pages which will hold the eye of the American student of psychiatry, for here, in a nutshell, is to be found the author's opinion of the classification of Kræpelin. A brief quotation may be of interest:

"Now, for some years, French psychiatry, visibly enticed toward German science, tends to adopt the classification of Kræpelin, the celebrated professor of Munich. This tendency is not peculiar to our country, but is found in many others.

"I was obliged then, not having in reality other intent than to do that which is just, to examine seriously the classification of Kræpelin, entirely

prepared to adopt it and to take it for guide if it should correspond to the essential qualities enumerated above of a good psychiatric classification, and if, easily comprehended by students and practitioners, it should be susceptible of giving them some clear ideas.

"I think, after examination, that the classification of Kræpelin, included with reason by Toulouse among the nomenclature classifications, that is to say, among the simple nosological enumerations, would not be able by reason of the non-methodical character of its divisions, the multiplicity and intricacy of its forms, and finally its, for us, often insufficiently precise terminology, to serve here according to the principle and plan of our descriptions.

"And so, after mature reflection, and without assuming again the least *amour propre* of the author, I consider it my duty to remain faithful to my classification, a clinical framework sufficiently simple to be universally available and sufficiently elastic at the same time to lend itself to the modifications demanded by the incessant evolution of psychiatry.

"To establish a classification in psychiatry, it is necessary in the first place to separate from the *primitive psychopathic states* or *true psychopathies* the *secondary psychopathic states* or *psychopathic syndromes.*

"Thus, *systematized insanity of persecution* is a *psychopathy* because it is an entity, simple and irreducible; the *psychosis of la grippe,* on the contrary, is nothing else than a *psychopathic syndrome,* susceptible of being found, such as it is, in all the infectious and toxic psychoses.

"If, then, it is legitimate to embrace in a classification the systematized insanity of persecution, it is not permissible to include therein detailed or grouped in several classes as have done several authors, among them Kræpelin, the various febrile, infectious, and toxic psychoses simple varieties of association of one and the same fundamental psychopathic state: mental confusion."

The second part, that on *special pathology,* follows the order and principle laid down in his remarks on classification. Briefly recapitulated, the outline is as follows:

PRIMITIVE PSYCHOPATHIC STATES.

I.

Psychopathic Diseases or Psychoses:
- A. General Psychoses.
 - I. Mania.
 - II. Melancholia.
 - III. Mania—melancholia (*Folie à double forme*).
 - IV. Mental Confusion.
- B. Essential Psychoses.
 - I. Progressive Systematized Psychosis.

II.

Psychopathic Infirmities:
- A. Psychic Infirmities of Evolution (Degeneracies).

I. *Désharmonies (dégénérés supérieurs, dégénérescents).*
II. *Dégénérescences (dégénérés moyens ou proprement dits).*
III. Monstrosities (*dégénérés inférieurs*).
B. Involutional Psychic Infirmities (*Déchéances*).
I. Primitive Dementia.

The first section of this second portion of the book is taken up with the study of the *Primitive Psychopathic States,* the subdivisions of which are given above. Then in a second section the author returns to a discussion of the *symptomatic psychopathies,* the mere syndromes, which, to his mind, have no place in the classification of primitive psychopathic states, but are dependent upon and secondary to other conditions. The mental disturbances which compose them are, in all, more or less similar; on the other hand, they follow the general type of the primitive psychopathic states and in particular those of melancholia and of mental confusion.

He divides these *associated psychopathies* into four groups.

I. *Psychopathies of Exo-intoxication,* including alcoholism, saturnism, morphinism, etherism, chloralism, cocainism, oxy-carbonism, etc., etc., pellagre, paludism.

II. *Psychopathies of Auto-intoxication,* including, under the special variety, gastro-intestinal, hepatic, renal, cutaneous, genital, etc.; and under a general head, *surménage,* inanition, traumatism, operation, insolation.

III. *Psychopathies of Infection,* including (1) typhoid fever, grippe, pneumonia, polyneuritis, diphtheria, erysipelas, cholera, rabies; (2) syphilis, tuberculosis, cancer.

IV. *Psychopathies of Diseases of the Nervous System.*—1. (Cerebro-spinal) brain abscess, tumors, arteriosclerosis, hemorrhage, general paralysis, tabes, multiple sclerosis, syringomyelia, Parkinson's disease. 2. (Neuroses) epilepsy, hysteria, chorea.

This section, comprising at least a fourth of the total volume, is, from the standpoint of the general practitioner and clinician, a most valuable section, and constitutes in its wealth of detail and minuteness of description, not only an innovation in psychiatric text-books but also the most original portion of M. Régis' work. It is particularly refreshing to one who has sought in vain to make clinical facts harmonize with the artificial and unclinical arrangement which is still adhered to by Kræpelin in his description of the infectious and exhaustion psychoses.

Practical Psychiatry is the subject to which the third part of the book is devoted; *i. e.,* to diagnosis, history taking, examination, and treatment. Finally, there are some closing chapters on hospital organization and upon the medico-legal questions relating to the insane.

Those who have followed this review carefully will see that it speaks of a book which is *worth while.* It is to French psychiatric literature what Kræpelin's text-book is to the German. It is a matter for regret that psychiatry should not be less *French* and less *German,* but more catholic. For our present needs an ideal classification could be constructed if

reciprocity might be established between the work of Régis and that of Kræpelin: if the former could be persuaded, on the one hand, to incorporate a little more Kræpelinism into his *Primitive Psychopathic States* and if, on the other, the latter should clarify his *Associated Psychoses* with an instillation of the spirit of Régis, what a sudden burst of sunshine would light the pages of psychiatry for the befuddled mind of the student. Fortunately, it is our privilege to take from each that which best suits our needs.

WM. MCDONALD, JR.

The World's Anatomists. Concise Biographies of Anatomic Masters from 300 B. C. to the present time, whose names have adorned the literature of the medical profession. By G. M. H. KEMPER, M. D., Professor of the History of Medicine in the Medical College of Indiana. With eleven illustrations. (P. Blakiston's Son & Co., Philadelphia, 1905.)

This attractive booklet presents in a brief and concise form biographical details respecting the best-known anatomists of the old world. A point of special interest in looking over the book is to note the number of instances where the name of the anatomist has become associated with some organ or region of the body discovered or especially studied by him. We read of Bartholin's glands, Bigelow's ligament, Bizzozero's corpuscles, Bowman's glands and capsules, Campeo's ligaments, Cowper's glands, etc. To enable the student to ascertain thus easily what men have made important discoveries and whence the familiar names of the text-books came helps to verify the past and throws light upon the evolution of the science. The biographies are too condensed. One wishes to know more of the pioneer workers in anatomy. Few American names are given—a sad commentary upon the lack of interest in anatomy as a science which characterized our country during the 19th century. It is gratifying to know that a new interest has already been awakened and that the 20th century promises a brighter future.

Abstracts and Extracts

1. *Clinical and Experimental Observations Upon General Paralysis.* By Lewis C. Bruce. British Medical Journal, 29 June, 1901.

2. *Observations Bearing Upon the Question of the Pathogenesis of General Paralysis of the Insane.* By W. Ford Robertson. British Medical Journal, 29 June, 1901.

3. *A Discussion on the Rôle of Toxic Action in the Pathogenesis of Insanity.* By W. Ford Robertson, J. B. Spence, R. Jones, E. Goodall. British Medical Journal, 26 October, 1901.

4. *Bacteriological Investigations into the Pathology of General Paralysis of the Insane. Preliminary Note.* By W. Ford Robertson, G. Douglas M'Rae, John Jeffrey. Review of Neurology and Psychiatry, April, 1903.

5. *Experimental Observations Upon the Pathological Action of an Organism Resembling the Klebs-Löffler Bacillus Isolated from Cases of General Paralysis of the Insane. Preliminary Note.* By W. Ford Robertson and Theodore Shennan. Review of Neurology and Psychiatry, April, 1903.

6. *Bacteriological Investigations into the Pathology of General Paralysis of the Insane.* By W. Ford Robertson, G. Douglas M'Rae, and John Jeffrey. Review of Neurology and Psychiatry, May, 1903.

7. *Historical Evidence of the Presence of an Organism Resembling the Klebs-Löffler Bacillus in Cases of General Paralysis of the Insane.* By W. Ford Robertson. Review of Neurology and Psychiatry, July, 1903.

8. *On the Presence of Diphtheroid Bacilli in the Genito-Urinary Tract in Cases of General Paralysis and Tabes Dorsalis.* By W. Ford Robertson and G. Douglas M'Rae. Review of Neurology and Psychiatry, May, 1905.

9. *The Pathology of General Paralysis of the Insane.* By W. Ford Robertson. The Morison Lectures for 1906. Review of Neurology and Psychiatry, February-March-April, 1906.

Bruce (1) made clinical observations on patients in whom the disease was progressive, on patients in a state of remission, and those concerned in an attempt to produce remission.

In patients of the first class he noted that the temperature changes were more pronounced in the first stage and were followed by a remission.

This continued until the second stage was established in which the remissions were less frequent. In the third stage the temperature is very irregular but high temperatures are infrequent. He concludes from a study of the temperature charts that such recurrent febrile attacks are due to some recurrent febrile cause.

The leucocytosis in the earlier stages was high, but in the latter stages the reaction was not so vigorous.

In one case a streptococcus was found in the blood and urine but was not cultivated.

The serums of the progressive cases were tested as to their agglutinative power on Bacillus Coli in dilutions varying from 1-5 to 1-20, and no reaction was obtained.

In patients in a state of remission the leucocytosis gradually fell to that of ordinary health. Seven such cases gave a definite agglutinative action to B. Coli in dilutions varying from 1 in 5 to 1 in 20. Two patients in an early and progressive stage of the disease were treated with subcutaneous injections of 2cc. of defebrinated blood-serum from a case in a well marked remission. Both patients are alive two years afterwards.

He concludes that general paralysis is a disease due to bacterial toxins, that there is probably a mixed infection, and that some form of serum treatment is the proper therapeutic measure.

Robertson (2) discusses the various theories that have been advanced in explanation of the pathogenesis of general paralysis, reiterates his views in opposition to Mott's theory of premature involution and lays special stress on toxæmia as the chief etiological factor. In searching for the source of the toxins he noticed changes in the blood vessels of the liver as well as pigmentary and fatty changes in the liver cells as formerly noted by Angiolella. In the gastro-intestinal tract were found various inflammatory changes leading to thickening of the walls of the stomach and intestine. He summarizes his conclusions as follows: (1) General paralysis is dependent upon the occurrence of a chronic toxæmia of gastro-intestinal origin; (2) the toxins are mainly bacterial and are formed in consequence of a partial breakdown of those forces by which the harmful development of the micro-organisms that constitute the ordinary flora of the alimentary tract is normally prevented; (3) the toxins are absorbed and tend specially to produce proliferative and degenerative changes in the vessels of the central nervous system; (4) these vascular changes tend to set in earliest in those parts of the brain that are relatively best supplied with blood, because their walls are brought in contact with the largest quantity of toxins; (5) tabes dorsalis is dependent upon the same form of toxæmia; (6) the part played by syphilis in the pathogenesis of general paralysis and tabes dorsalis is essentially that of altering the natural immunity; (7) there is some evidence in favor of the hypothesis that this alteration in the natural immunity is dependent upon commencing exhaustion of the leucoblastic function of the bone marrow; (8) the treatment of general paralysis and tabes dorsalis should be

directed primarily to the correction of the disorder of the alimentary tract; (9) probably the only means by which it will be found possible to check the excessive growth of the gastro-intestinal bacteria is that of the employment of specific antitoxins; (10) to arrest the disease by such means may be more practicable than would at first sight appear, because it is probable that the specially injurious toxins are the products of only a few bacterial forms.

Robertson (3) in opening the discussion said that there were three essential factors for the manifestation of normal action, viz.: normal cortical neurons, suitable nutritional conditions, and sensory impulses.

The neurons may be defective from birth or may be affected by the direct action of purely physical agencies, such as heat, cold, electricity, and mechanical force.

Severe pain has caused insanity but usually in such cases there have always been concurrent etiological factors without which the disorder would not have resulted. There are at least two ways in which the chemical substances brought by the blood vessels to the cortical neurons may be unsuitable for their healthy nutrition. There may be a deficiency of certain constituents which are needed for their normal metabolism or substances taken up by the cells may disorder nutrition. The latter group, the toxins, are discussed at some length. The toxins act either directly on the nerve cells or indirectly on the cells by deficient nutrition through disease of the nutrient vessels.

The various toxic conditions may result from exogenous toxic agents, *e. g.*, alcohol, lead, opium, from infections as syphilis, influenza, streptococcus infections, and from auto-intoxication and auto-infection.

The gastro-intestinal tract is the great source of auto-intoxication and Robertson states that he is of the opinion that various forms of toxæmia of gastro-intestinal origin are the chief factors in the pathogenesis of a large array of acute and chronic diseases, including several forms of mental disease. These diseases include the various manifestations of arteriosclerosis and its consequences, a large proportion of cases of senile insanity, general paralysis, locomotor ataxia, chronic alcoholic insanity, dementia-præcox, idiopathic epilepsy (as the determining cause of the fit), and most cases of acute and chronic mania and melancholia and of chronic Bright's disease.

Robertson, M'Rae and Jeffrey (4) record the finding of evidence of a severe toxic infection in the alimentary canal and respiratory tract in general paralysis, and also the finding in the stomach, tonsile and bronchi of an organism resembling the Klebs-Lœffler bacillus.

Robertson and Shennan (5) injected the organism into the pleura of white rats and found that they invaded the surrounding tissues and also the pericardium. Feeding rats with cultures of the organisms resulted in death. Microscopically there was found a gastro-intestinal catarrh and proliferative and degenerative changes in the liver. In the brain was found a severe degeneration of a large proportion of the cortical nerve

cells, early acute periarteritis, proliferation of the neuroglia, proliferation of the mesoglia, and infiltration of the pia-arachnoid.

Robertson, M'Rae, and Jeffrey (6) discuss the previous bacterial investigations in cases of general paralysis and give a summary of their own investigations. They found that as a rule the blood of general paralytics is sterile.

The Klebs-Lœffler bacillus was isolated from the ileum, stomach, tonsils, bronchi, lung tissue and brain, *post mortem*, and in the mouth and expectoration during life.

No specific agglutinative action of the blood-serum upon cultures of the Klebs-Lœffler bacillus could be obtained. No decided beneficial therapeutic action could be obtained by the use of anti-diphtheritic serum.

They conclude that general paralysis is the result of a chronic toxic infection from the respiratory and alimentary tracts, permitted by general and local impairment of the defenses against bacteria, and dependent upon the excessive development of various bacterial forms, but especially upon the abundant growth of a Klebs-Lœffler bacillus of modified virulence, which gives the disease its special paralytic character.

Robertson (7) gives the results of histological investigations which he made in cases of general paralysis with special reference to the presence of the Klebs-Lœffler bacillus. The organism was oserved in the catarrhal exudations in the alimentary or respiratory tracts of all of twenty cases examined. In most of the cases the organisms were present in considerable numbers and in eight cases were observed in very great numbers.

In five of the cases a filamentous organism was found. This organism appeared as smooth threads of various lengths and, in carbol thionin preparations showed alternate pale and dark portions, the latter being the shorter. Bacillary forms were common and were morphologically identical with some of the granular and barred forms of the diphtheroid organism, except that it tended to be rather larger.

Neither the diphtheroid organism or the thread form were demonstrable in sections of the brain.

Robertson and M'Rae (8) report the findings of an investigation as to the presence of the diphtheroid organism in the genito-urinary tract and in the urine in cases of general paralysis and tabes dorsalis. The organism was obtained from the vaginal discharge of fourteen female general paralytics and from the surface of the urethra of twenty-two male general paralytics.

Several cases of tabo-paresis were examined and the organism was found in the bladder and in the centrifugilized urine.

The authors refer to the work of Orr and Rouso and conclude that tabes is caused by an infection by the diphtheroid bacillus. The infection starting from the bladder.

W. Ford Robertson (9) delivered The Morison Lectures On the Pathology of General Paralysis, in the Royal College of Physicians, Edinburgh, January 24, 26, 29, 1906. In these lectures he states that since 1902

he and Dr. M'Rae have been conducting bacteriological investigations on a microorganism closely resembling the bacillus of diphtheria, and that now they were able to bring forward evidence to show that general paralysis and the allied disease—tabes dorsalis—are as specific in their causation as tuberculosis, typhoid fever and diphtheria. They had now succeeded in obtaining the diphtheroid bacillus from the brain in nine cases out of twenty-three, in which cultures were made from this organ; they had also succeeded in detecting the bacillus in microscopic preparations in the fresh blood and cerebral-spinal fluid as well as in the walls of the cerebral vessels. In these instances the bacilli were rarely capable of staining in the usual way, and this fact has raised the question whether these bacilli were not from time to time gaining access to the circulation, and being rapidly destroyed by phagocytic and lysogenic action. This hypothesis had been experimentally put to the test by investigating the action of the living blood upon pure cultures of diphtheroid bacilli isolated from cases of general paralysis. The results of this inquiry had served to throw light upon the problem of the pathogenesis of the disease. The organism differing from the diphtheria bacillus only in want of virulence was regarded as an attenuated form of the Klebs-Loeffler bacillus. Recent observations, however, led them to consider it as a special organism.

The thread form of the organism was especially considered. The workers had succeeded in obtaining a filamentous growth by cultivating it for several days at 41° C. upon blood films. It was therefore probable that invasion of the tissues by the thread form occurred in cases in which there had been a sustained high temperature on several days before death. One of the points they had especially studied was the phagocytic action of the leucocytes upon the bacillus. Two reactions had to be studied, namely, the power of the leucocytes (in the natural serum) to take up the bacilli, and the power of the leucocytes to dissolve the bacilli when engulfed. No constant alteration could be detected in the power of taking up in the general paralytic's blood.

On the other hand, the power of dissolving the bacilli when taken up had in most cases been distinctly greater on the part of the leucocytes of the general paralytic than on that of the leucocytes of the control. Within the first three hours of incubation, at least, the lysogenic section was entirely intra-corpuscular. Having studied the appearance presented by the dissolving organisms in the experimental films, they endeavored to ascertain if bodies having a similar appearance could be found in the fluid and tissues of the general paralytic. Every case studied with this object had given the same affirmative answer. Diphtheroid bacilli, more or less altered by lysogenic action, were present in great numbers in the catarrhal pneumonia foci that occurred in most general paralytics dying in congestive attacks. They could also be detected in the adventitial spaces of the inflamed cerebral vessels and in the meshes of the pia arachnoid. They could also be observed in films made from the blood of the living paralytic, especially if the patient was suffering from a congestive attack.

They could also be detected in the centrifuge deposit from the cerebral-spinal fluid obtained by lumbar puncture, and in the centrifuge deposit from the urine, especially during a congestive attack. This study suggested to them that failure to obtain cultures from the blood and cerebro-spinal fluid depended upon the fact that most of the bacilli were dead and that the few living ones that were occasionally present were killed in consequence of the continued action of the phagocytic cells. By allowing the tubes to stand in cold water for twenty-four hours before incubating them they succeeded in getting pure growths from the blood in four cases (three of the patients being in congestive attacks) and from the cerebro-spinal fluid in two. The growths were at first generally extremely feeble, but the organism could be invigorated by being sub-cultured upon blood films.

A search had been made for a specific action of the blood of the general paralytic upon these bacilli.

They had estimated the percentage of altered bacilli in the leucocytes after three hours' incubation. This gave what they called the intra-corpuscular bacteriolytic index which was, as far as their observations went, higher in the general paralytic's blood than in the control bloods.

In discussing the problem of etiology and pathogenesis of general paralysis and tabes dorsalis Dr. Robertson contended that the part played by syphilis was only that of weakening the general and local defences. There were many strong reasons for believing that these diseases could not be essentially syphilitic in their causation, and moreover there was the clearest evidence that the general paralytic suffered from an active bacterial toxæmia. In general paralysis, the specific bacillus seemed to be conveyed from individual to individual by contagion. There was ample warrant for the conclusion that it could neither multiply to any extent upon a healthy mucosa nor invade the tissues. A preliminary weakening of the local and general defences was evidently necessary. This weakening was accomplished in general paralysis by three principal forces—syphilis, alcohol and excessive use of nitrogenous foods.

The saprophytic infection might continue for a long time without leading to any important toxic effects, only when the bacillus invaded the tissues did the paralytic toxæmia become of any great intensity. The bronchi and alimentary tract were the important infection atria. It was found that lowering the temperature four or five degrees C. below the normal greatly diminished the power of the leucocytes to take up these bacilli and therefore it was concluded that lowering of the body temperature was an important cause of aggravation of the bacillary attack. Local invasion manifested itself clinically by a congestive attack.

The bacilli reached the circulation either by way of the lymphatics or through the capillary walls. Most of the bacilli that reached the blood were quickly seized by leucocytes and digested, but many escaped from the circulation in one of two ways, namely, through the capillaries of the kidney into the urine and through the walls of the cerebral vessels into the adventitial lymph-channels. The further disintegration of the bacilli

that took place in these lymph channels gave rise to a local toxic action. In some instances a successful repulsion of the invasion was followed by a prolonged period in which the bacillus was kept at bay. Clinically this corresponded to a remission.

In discussing the pathogenesis of tabes dorsalis he referred to the recent observations of Orr and Rowe upon the production of tabetic lesions of the cord by the absorption of toxins from peripheral septic foci. In order to account for the similar lesions which occurred in tabes it was necessary to find some peripheral toxic focus. So far as their evidence went, this focus was the bladder. In ten consecutive cases of tabes they had found that there were abundant living diphtheroid bacilli in the urine in too great numbers to have come merely from the urethra, which in other cases very frequently contained some diphtheroid bacilli. The bacilli were invading and therefore produced toxic effects far greater than those that resulted from the simple passage of disintegrating bacilli through the urinary tract.

Since the general paralytic defended himself, and often with prolonged success, by manufacturing specific bacteriolytic anti-bodies the treatment would seem to consist in producing such anti-bodies in suitable lower animals, and to use them as therapeutic agents. RICKSHER.

Pathology of General Paralysis of the Insane. By JOHN D. O'BRIEN. American Medicine, 23 September, 1905.

The author reviews the various opinions held as to the causal agent of general paralysis giving special reference to the work of Bruce and Robertson.

In personal observations he noted the presence of a diphtheroid organism in the stomach washings of eleven out of fourteen cases examined. The organism was obtained from the urine in seven of the ten cases examined. In a series of twelve cases examined the organism was found in the nose and throat in ten.

Robertson's views as to the causation of general paralysis are practically given in entirety and his conclusions are closely followed by the author.

RICKSHER.

De l'absence de glucose dans le liquide céphalo-rachidien (expériences et résultats). Par M. C. DUBOS. Annales Médico-Psychologiques, An. LXIII., p. 393, Novembre-Décembre, 1905.

The author briefly reviews the opinion which has been current since the time of Claude Bernard that the cerebro-spinal fluid contains a body which is reducible by Fehling's solution, and by analogy with the clinical examination has been by a number believed to be glucose. This view while rather generally accepted has found a number of opponents who have believed this reducible body to be pyrocatechine, a body of the aromatic series. In the present study the author has tested for sugar in the

cerebro-spinal fluid of paretics, tabetics, cerebral syphilitics, and chronic alcoholics in the hospital with which he is connected. The author has employed the tests of Trommer, Barreswill, Fehling, Boettger, Moore, and the phenylhydrazine, and fermentation processes, using a solution of glucose as a control and comparing the result carefully with the same test, with cerebro-spinal fluid. The results lead to the conclusion that there is no glucose in the cerebral spinal fluid, excepting in diabetics, and that the reducing body is a xanthic base (creatine, creatinine, xanthine and hypoxanthine) due to cell activity. W. R. D.

Ricerche sul potere uro-tossico, siero-tossico e siero-emolitico nei malati di frenosi maniaco-depressiva. DEL ANGELO ALBERTI. Giornale di Psichiatria Clinica e Tecnica Manicomiale, An. XXXIII, p. 369, 1905.

This is quite a long experimental research of which the conclusions are:

1. In maniacal-depressive insanity there is neither an increase nor a diminution of the toxicity of the serum and of the urine; the same variations being observed as in the normal. This fact is ground for the opinion that autointoxication, even if present, has little significance in the pathogenesis and course of this disease.

2. In maniacal-depressive insanity the lytic power of the serum to disintegrate the red cells of the rabbit is variable: this variability not being characteristic and not differing from the normal.

The author also reaches other conclusions which are not restricted to the field of maniacal-depressive insanity but are of importance in general pathology:

1. There is no constant inverse ratio between the uro-toxicity and the sero-toxicity. It has only been found in three cases, after repeated trials.

2. There is also no ratio between the uro-toxicity and the specific gravity of the urine.

3. Neither is there any ratio between the sero-toxicity and the hemolytic power. W. R. D.

Les Troubles Oculaires dans la démence précoce. Par GEORGES BLIN. Revue Neurologique, 28 Fév., 1906, XIV, Année No. 4.

A total of 87 patients were examined. The observations were made in a dark room, at the same hour, the patients being, as far as possible, exposed to the same preliminary lighting. Each patient was examined several times at intervals of three months. Blin ranges his findings in two categories: (1) The variable, transient manifestations, which are the most frequent, and (2) the disturbances which have presented in the successive examinations a tenacity and a constancy which would permit of giving them a place in the symptomatology of dementia precox.

First Category—Mydriasis 20% pupillary inequality, 19% myosis, 7% are signs which are rare and inconstant.

The congestion—26%, or decoloration of the pupil, 17%, which are observed a little more frequently are symptoms usually slightly marked and are generally variable.

The enfeeblement or abolition of the two reflexes, light and accommodation, can be considered rare, 5% dissociation, consisting in an abolition of the accommodation with conservation of the light reflex, is exceptional and generally inconstant, 10%.

The above variations can come from purely physical causes. Mydriasis and myosis can be due to the state of the patient at the moment of the examination; according to the impulse of the moment the patient can or cannot accommodate, due to the psycho-inhibitory hallucinations and negativism. The patients may also present the alternate states of depression and excitation, which can explain, by vaso-motor phenomena, the variations in the circulation of the brain leading either to congestion or decoloration of the pupil.

Second Category—The most important symptom, as much on account of its remarkable constancy as by its relative frequency, is constituted by the dissociation of reflexes known under the name of the Argyll-Robertson pupil. Contrary to the ocular troubles in the first category this sign is never transitory, it was always distinct at each examination. It frequently comes on gradually, beginning with a simple diminution of the light-reflex, which later is transformed into a complete abolition. Whenever found, either in the beginning or consecutive to a diminution, this abolition has been persistent. The following conditions were found:

Argyll-Robertson pupil	13.8%
Mydriasis	7%
Pupillary inequality	7%
Myosis	2%
Decoloration of the pupil	8%
Congestion of the pupil	10%
Enfeeblement or abolition of the reflexes	3%
Loss of accommodation with conservation of the light reflex	6%

Of all the ocular disturbances which are found in Dementia Precox the Argyll-Robertson pupil seems to be the most important. All the other disturbances can be transitory, this alone is always permanent.

C. R.

Considérations pathogéniques sur le mutismé et la sitiophobie des déments précoces. Par Dr. Gabriel Dromard. Annales Médico-Psychologiques, An. LXIII, p. 374, Novembre-Décembre, 1905.

The author endeavors to explain the origin of the mutism and the refusal of nourishment which are so often seen in cases of dementia praecox, illustrating his points by a number of case abstracts. He concludes that the mutism and refusal to take food may have a number of sources, and groups them as follows:

(*a*) A conscious and voluntary mental activity, which may be reasonable (delusion) or be arbitrary (notionalism).

(*b*) A secondary automatic mental activity (stereotyped attitude).

(*c*) A primary automatic mental activity (negativism).

(*d*) An absence of mental activity (stupor or stupidity).

W. R. D.

Contribution à l'histopathologie de certaines formes de psychoses appartenant à la démence précoce (*Kræpelin*). Par DE BUCK ET DEROUBAIX. Le Nevraxe, Vol. VII, p. 163, 26 Décembre, 1905.

Considerations anatomo-psychologiques sur la démence précoce. Par DE BUCK ET DEROUBAIX, Journal de Neurologie, An. 11, p. 27, 20 Janvier, 1906.

The above papers report the same research, the former giving the histological detail more fully than the latter, which is more of the nature of a discussion of the findings. In the latter the histological findings are summed up as follows:

The changes in the nerve cells, shown by the methods of Nissl, Van Giesen and Flemming, are first seen in the chromatin which undergoes all degrees of alteration from fragmentation to complete disappearance (chromolysis and achromatosis). The achromatin undergoes granular and fatty degeneration with disintegration and finally disappearance. Pigmentary degeneration such as has been observed by Klippel and Lhermitte has not been observed. At first the nucleus is eccentric, irregular, and atrophied, but soon attains a condition of homogeneous degeneration, the nucleolus showing atrophy, fragmentation and finally disappearance, followed by death of the cytoplasm. It is only in very advanced cases that a diminution in the number of cells is observed. The intracellular fibrils, studied by the method of Cajal, show also regressive changes, parallel with those of the chromatin and achromatin, passing from atrophy to fragmentation, from a granular state to disappearance. The alterations are seen earliest in the cytoplasmic network which surrounds the cellular nucleus. They are therefore centrifugal.

The neuroglia, judged by the multiplication of the nuclei and the eventual presence of astrocytes, shown by the ordinary histologic methods, follow a proliferative course also parallel with the intensity of the cellular lesions. It is about the nerve cells and about the vessels that the neurogliar changes are most intense. The ganglion cells were always found surrounded by many neuroglia nuclei which even form indentations in their protoplasm, and the greater the cellular lesions the more marked those of the neuroglia; the number of astrocytes indicating the reactive activity of the neuroglia. The secondary sclerosis is therefore paralleled by the changes in the nerve cells.

The myelinated fibers show a relatively great resistance to the morbid process of dementia præcox, and in a typical catatonic case which lasted many years and where the cellular lesions were relatively intense and the

neurogliar lesions marked, the Pal method showed an almost complete preservation of the myelinated fibers, both of association and of projection. Rarely there is a rarefaction of the tangential and superradiary fibers. In the most advanced case, the regressive change of the fibers is from the periphery to the deeper regions of the cortex. The association fibers first disappear and the projection fibers then become thinned out. The change in the fibers is much less pronounced than in paresis. The intercellular network (stained by Cajal's method) is also very stable and it is only in the most advanced case that there is observed an evident thinning.

The vessels show but slight change. Most often is seen fatty degeneration of the vessel wall, deposits of blood pigment, and occasionally a slight proliferation in the capillaries and a sclerosis of the adventitia of the smaller vessels. In none of the eight cases was there seen any trace of perivascular infiltration, of leucocytic exudate, nor of plasma cells.

From the similarity of these changes to those observed in alcoholic dementia, and in other dementias of toxic origin, the authors are of the opinion that dementia præcox is of toxic or autotoxic origin. The authors also object to the division proposed by Klippel and Lhermitte of *démences organiques* and *démences vésaniques* on the ground that it is not well founded, and propose the grouping of interstitial dementia, including senile dementia, paresis, and dementia following encephalitis or neoplasms, and parenchymatous dementia, including acute dementia (*démence aiguë*), dementia præcox, epileptic dementia, and the dementias following the use of exogenous poisons such as lead, alcohol, etc.

A further point of disagreement is the location of the nerve cell changes, which according to Klippel and Lhermitte are found only in Flechsig's association areas and not in the projection areas. De Buck and Deroubaix have only found that the nerve cell changes are more marked in the frontal lobes, but the same is true of paresis. They have, however, found the most marked changes in the deeper cell layers. W. R. D.

The Function of the Left Prefontal Lobe. By CHARLES PHELPS. American Journal of the Medical Sciences, Vol. CXXXI, p. 457, March, 1906.

After referring to his published writings on this subject, and quoting the conclusions to that of 1902 (see this Journal, Vol. LIX, p. 553) the author gives abstracts of eleven additional cases which he believes support his view that lesions of the left prefontal lobe are succeeded by serious mental disturbances. In a concluding note he corrects a misquotation made in the recent translation of Bianchi's Text-book of Psychiatry. W. R. D.

On "Double Ego." By ALFRED GORDON. American Journal of Medical Sciences, Vol. CXXXI, p. 480, March, 1906.

After a few remarks on the subject of dual personality, Dr. Gordon narrates the history of a case which was unusual in presenting the coexistence of two egos at the same time, and in which treatment directed to the presumed presence of epilepsy was followed by improvement.

W. R. D.

Half-Yearly Summary

CALIFORNIA.—*Southern California State Hospital, Patton.*—The next quarterly meeting of the Lunacy Commission, representatives from the Boards of Managers, and the Medical Superintendents of the same, will be held at this institution on Saturday, April 21. The business to be transacted is as follows:

Psychic discordances, etc., by Dr. Leonard Stocking, Medical Superintendent of the State Hospital, Agnew, Cal., and Water in the Treatment of Acute Mental Diseases by Dr. E. E. Stone, Medical Superintendent of the State Hospital at Napa, Cal. The discussion upon the plans submitted for cottages for tubercular patients in the Southern California State Hospital at Patton, California. Discussion of cottages for receiving wards with complete hydrotherapeutic apparatus connected with the same.

The work on the east wing is rapidly nearing completion, and it will doubtless be ready for the accommodation of 150 patients by the first of August.

CONNECTICUT.—*Connecticut Hospital for the Insane, Middletown.*—The remodeling, enlargement, and decoration of the assembly room at this hospital is practically completed. The room will now have a seating capacity of about 1000.

The new hospital for contagious diseases is nearing completion. It is already closed in and the roof in place. The capacity when finished will be about fifty beds.

The Trustees contemplate increasing the water supply of the institution during the coming summer by building a new storage reservoir. The land for that purpose, which includes the site for the dam and an extensive water-shed, has already been acquired. No piping will be necessary.

The new bathing establishment consisting of twenty rain-baths, and including a complete hydrotherapeutic department, by Richter of New York, is nearly ready for use.

Contracts have been let for the erection of 1574 lineal feet of wrought iron fence about the grounds of the institution, and the work will be commenced at once.

Various other improvements are in contemplation for the coming summer. The number of patients under treatment at the expiration of the quarter ending with March 31, 1906, was 2481.

DISTRICT OF COLUMBIA.—*Government Hospital for the Insane, Washington.*—The selection of Dr. Charles H. Clark to occupy the post of Clinical Director at this hospital, in effect April 1, this year, simultaneously creates

and fills a position in the hospital service which Dr. William A. White, the superintendent, has had under consideration since 1904. Dr. Clark has been a member of the medical staff of the Government Hospital since 1899 and has more recently filled the position of Second Assistant Physician. Closer organic connection of the different medical services, with general supervision of all medical work, of the hydrotherapeutic departments, the operating rooms and training school; the medium through which will be made all transfers of patients from one service to another, the making of special clinical studies and an effort to keep abreast of the medical literature of the times, with a view of having adopted any line of treatment that may be beneficial, indicate the scope of this officer's duties.

The appointment of a female assistant in the work being done in the laboratory having been determined upon, Miss Grace A. Lane has been promoted to this position from the ward service.

The work of the woman physician, Dr. Mary O'Malley, has fully justified her appointment, which took place in September last. Her presence has been felt in the daily inspections of the female section of the institution, as likewise in the treatment of the ills of the female employés and the female patients.

The hydrotherapeutic outfits, now three in number, are in daily operation, between sixty and seventy patients being treated each day.

A number of operations have been performed in the hospital operating room. Although not numerous they have been generally of such a character as to hardly have been justifiable except in a thoroughly equipped and modern operating room.

The piazzas on the second floor of Oaks A building have been enclosed in glass and a ward made having a southern exposure for white tubercular females.

Dix 3 building has been equipped for the use of colored tubercular males.

The Retreat building is in process of renovation, to be later occupied by colored men, who will vacate the Annex building.

The fire engine house has been fitted up and quarters have been opened upstairs for sleeping apartments for members of the engineering force, thus insuring some one on duty in this building throughout the night.

Contracts have been made for furnishing considerable quantities of fire hose and fire extinguishers for the hospital. Plans are being prepared for a somewhat elaborate installation of fire doors throughout the high buildings of the old construction.

In addition to these precautions a special engineer has been appointed who has complete charge of the fire apparatus and of the appurtenances pertaining to fire protection.

The installation of the new machinery with which the two additional wings built to the laundry have been equipped, has been completed.

A coal trestle is under construction adjoining the railroad track for use in handling hard coal. Incidentally it may be mentioned the hospital has

been receiving coal in order to be well supplied in any serious emergency that may arise, so that at this time about 6000 tons are on the grounds.

An additional reservoir is being built at the pumping station.

Perhaps the greatest change wrought in the methods at this hospital in the past six months has been in conjunction with the installation of a more accurate business system through the various departments. This has been accomplished by the employment of an expert accountant, the working out of a very complete plan of auditing, cost accounting, etc., involving changes in store house methods, the issuance of goods, requisitions for supplies and the designation of a matron and chef to carefully inspect and note details in these regards.

ILLINOIS.—*Illinois Asylum for the Incurable Insane, (Bartonville) Peoria.*—Unusual activity marked every department of the institution during the biennial period just closed. The reorganization of the service incident to the passage of the civil service law and its application to the State charitable service wrought very few changes in this institution which, from the outset, was conducted on the merit system.

One of the gratifying results was the advancement of Dr. George Michell to the position of Senior Assistant Physician, a merited recognition of his faithful efforts in carrying out the fixed policy of the institution, non-restraint and non-imprisonment.

More than two hundred patients have been admitted since January 1, bringing the total population up to sixteen hundred and fifty.

The increasing number of aged and infirm made it necessary to convert several of the smaller cottages into hospitals. In this manner hospital care was extended to one hundred additional sick or infirm inmates.

The epileptics have been segregated and will be given such dietetic and medicinal attention as may influence their condition. Careful records will be kept and results noted.

In December the entire force was put upon the eight-hour schedule. It is a move that has been in contemplation two years, and after four months' trial it is a pronounced success. It is not only a recognition of the just demands of labor but it has increased the efficiency of the force without materially adding to the cost of maintenance. A detailed statement of the classification of the inmates and the assignment of the force might be of interest, but would require too much space.

As fast as male attendants retired from the service women were substituted with the result that six hundred of the male inmates are now cared for by women. The improvement in the character and habits of the men has attracted favorable attention and the better care they are receiving has caused a decided improvement in their condition, especially in the infirmaries.

The experiment of caring for sixteen hundred and fifty inmates without bars, grating, cells or screened rooms and without mechanical restraint of any kind has proven an unqualified success. Not one escape occurred since the advent of the present year.

The fourth assistant physician will be a woman and will be named as soon as available applicants present themselves. She will be expected to aid materially in the organization and conduct of the projected training school.

The out-door treatment for consumptives continued through the winter with the exception of two stormy nights. One of the large porches is enclosed with heavy canvas and isolation is thorough. The immunity from tuberculosis is remarkable, six being the greatest number present at one time.

—*Cook County Institutions, Dunning.*—Definite plans have already been made for the installment of the hydrotherapeutic department appropriated for by the County Board. An equipment consisting of one controller table, one shower with overhead douche, side sprays and perineal douche, one massage table, one special bath tub, one sitz bath, one hot air cabinet, will be installed in the west end, ground floor, of the hospital building for insane, where it will be accessible not only to the patients from that department, but by the special entrance to patients from any other department of the Cook County Institutions. Aside from the above equipment there will be a special department consisting of four continuous baths installed in a room adjoining the hydrotherapeutic department proper and another room also with four continuous baths on the opposite side of the building devoted to women patients. In addition, one of these special equipments for continuous baths will be installed in the receiving ward for men patients and another in the receiving ward for women patients. It is the intention to take care of the acutely maniacal and other suitable patients in the hospital building, using continuous baths as much as possible. The two equipments for the receiving wards are for the treatment of rather temporary excitements or other conditions requiring it.

An X-Ray outfit consisting of an 18-inch coil, several Crook's tubes and a high-frequency therapeutic outfit has already been installed and is being used at present.

A systematized effort is made towards providing almost constant occupation for the greatest number of the insane, particularly for the chronic class. A serious effort is being made not only to occupy the patients but to educate as many of them as possible in some industrial occupation, the object being to make them more or less permanently useful and probably capable of being useful outside of an institution of this kind, if suitable supervision can be provided for them. Large classes of women have been organized to begin with knitting and with rough sewing. From these classes individual workers capable of better work are selected and banded together into higher classes with a higher grade of work. The men patients are occupied mostly in common labor and in the truck garden. Smaller classes are organized for the purpose of industrial education and work along various lines, particularly necessary repairs and work in the tailor-shop, shoe-shop, carpenter-shop and elsewhere.

A suitable large hall equipped as a smoking-room has been provided for men employés. Heretofore there has been absolutely no provision made for the entertainment of employés. A combination billiard and pool table has already been purchased and it is the intention to construct a bowling-alley. Suitable accommodation has also been provided for the entertainment of women employés.

—*Illinois Eastern Hospital for the Insane, Hospital.*—Special attention has been paid during the past six months to the training school for nurses. The medical staff has been increased to nine members, and as each physician has to lecture to both juniors and seniors the course has been proportionately strengthened. The standard of the entrance examination to the senior class has been raised, this combined with the fact that there have been more autopsies leads to the hope that this class will excel all former classes. The graduating exercises will take place about the tenth of May.

Owing to the epidemic of smallpox in one of the other of the state institutions, and to the fact that many patients come from the congested districts of Chicago, extra precautions have been taken against contagious diseases. Whenever a patient is admitted his or her clothing is removed and placed in isolated basement rooms. These rooms have but one door and one window which can be tightly sealed. The disinfection apparatus as advised by the Illinois State Board of Health consists of a generator made here in the tin shop, being practically a tin can with flaring top covered with asbestos paper. It resembles a 15 by 10-inch inverted cone. In the container is placed 3½ ounces of potassium permanganate, over which is poured one pint of formaline 40% aqueous solution.

The weekly expense of subjecting the accumulated clothing to the generating gas is moderate, and the results entirely satisfactory. The patients are given disinfectant baths and supplied with state clothing before they are allowed to enter the receiving wards.

Entertainments for the patients have been more diversified during the past winter. In addition to the two weekly dances there has been organized two indoor baseball teams and six basket ball teams consisting of two male and two female attendants' teams, besides two teams composed of female patients. The patients, those that watched and those that played, took great delight in these games, which were held in the amusement hall, the attendants playing fifteen-minute and the patients ten-minute halves.

A class in calisthenics has been organized, as an experiment, in two of the male wards; these patients being drilled for twenty minutes daily. This attempt has proved so beneficial and interesting to many that it is expected to enlarge the class and to hold the exercises in the general amusement hall, where all the patients who attend the amusements may see or take part in the drill.

—*Illinois Central Hospital for the Insane, Jacksonville.*—The training school started over a year ago is proving a success.

—*Illinois Northern Hospital for the Insane, Elgin.*—A new stand pipe and pipe line to the river will be constructed by means of which a supply of softer water will be obtained for the boilers and for sprinkling the garden. This will also relieve the draft on the wells which are supplied by spring water.

INDIANA.—*Northern Indiana Hospital for Insane, (Longcliff), Logansport.*—Two additional buildings are under construction, one for men and one for women, each having a capacity for 70 patients. The terra cotta roof work is being replaced by galvanized iron, as the former has been found unsuitable for a climate of so much severity. New tile floors have been laid in all the bath rooms, lavatories, sculleries, etc., throughout the hospital. Extensive additions have been made to the laundry equipment. A new and extensive hot water system has been installed which has a capacity for 8000 gallons per hour.

—*Southern Indiana Hospital for the Insane (Woodmere), Evansville.*—Contracts have recently been made for the erection of a new bakery building, an addition to the store house, and a building for the fire department, all of which are to be completed by October 1. The water supply has been improved by the erection of an iron tank having a capacity of 100,000 gallons and which stands on a tower at an elevation of 150 feet, thus giving an increase in storage and pressure. In connection with the tank there has been erected a Kennicott water softener which has a capacity of 10,000 gallons per hour. During the past six months the heating plant has been remodeled, the Webster system being installed and the heating was much improved during the past winter. A Kirker-Bender fire escape has been erected on one of the buildings which had not previously been so protected. Wire screens have been placed on the colonnades connecting the various buildings, thereby making it possible to give the patients the benefit of outdoor fresh air during inclement weather. A number of machines have been added to the laundry equipment. The old carpenter shop has been remodeled and converted into comfortable apartments for employés. Nine of the wards have been equipped with iron beds. The steam dummy railroad, connecting with Evansville, has been converted into an electric line.

IOWA.—*Mount Pleasant State Hospital, Mt. Pleasant.*—The improvements contemplated are the installation of a new operating room and of a hydrotherapeutic plant, and considerable work on the grounds.

—*Clarinda State Hospital, Clarinda.*—Since New Year's a new fireproof cottage, having a capacity for 100 male patients, has been completed and occupied. It is intended to accommodate those who during the day are occupied with work in the garden, shops, or on the farm, and is admirably adapted for this purpose, permitting the greatest possible freedom and giving homelike surroundings.

A large workshop, domiciling all the various
pentering, furniture making and other wood wor
tress making, and printing, has been completed a
isfactory.

MAINE.—*Maine Insane Hospital, Augusta.*—Th
recipient of two very important and valuable gift
ernment. The United States Arsenal contiguous
erty, which had been occupied by the government
obsolete because of the radical changes that hav
years in methods of conducting the war departm
Congress the entire property was deeded to the
interests of the insane of this State. The entire e
than forty acres, had been developing through
three-quarters of a century and has become a be
studded with full-grown elms and native oaks. U
property the legislature in session made an appro
of the largest of a dozen or more substantial g
the management of the hospital has been very
appropriations, not only for the fire-proof renovat
ing, but in the renovation of the older wings of th
placing the old wooden by fire-proof construction
eral stairways with iron construction. The ren
building is projected on the open ward plan, the
feet is for a day room and the middle and upper
on the general hospital plan, are for dormitories.
use of a chronic class of patients who have beco
pital care. This is a new departure from forme
expecting favorable results from this experimental

In addition to the above gift the institution is
General Government, of an island in Penobscot
stantial and commodious brick building originally fi
pital. The entire island is fully developed by a
buildings, water supply and every equipment suitab
use as a convalescent home for two months last sur
ficial for the patients and the results obtained wer
determined to extend this method of treatment
months the present season.

MARYLAND.—*Springfield Hospital, Sykesville.*—
epileptics and the cottage for convalescent women
the April Summary of 1905 have been occupied an
tractive, the dayroom resembling the lounging ro
house. An addition has also been made to Butter-
epileptics which gives an increased capacity of twen
shop has been occupied, and mattress-making and

tailoring, which was already in operation. An addition has been built to the greenhouse, a new blacksmith shop erected, much work has been done on the roads, and many other improvements made. An epidemic of typhoid fever last summer caused some trouble but was soon under control and no fatal cases resulted.

MASSACHUSETTS.—*State Colony for the Insane, Gardner.*—The administration building was occupied January 1, 1905, the new frame group for 25 patients the middle of February, and the receiving ward for 100 women June 1. A new group to accommodate 100 male patients is about completed, and is composed of three separate wooden buildings. The central one has the kitchen and dining-rooms in the basement, which, owing to the side hill location, is on three sides practically above ground. The first floor contains a reception room, large day room, and toilet rooms, the attic being used for sleeping rooms for officers. The remaining two buildings are one-story cottages, shaped like the letter H, both having dormitories for 25 patients each, and a central connecting portion containing the toilet rooms, linen and attendants' rooms. The basement of this part is to be used for locker rooms, heaters and coal storage. Each building is to be heated independently by steam, the boiler room in each building being of fireproof construction. Lighting will be by electricity from the central power plant, a mile and a half away. A one-story wooden building, 50x70 feet, to contain the carpenter, machine and blacksmith shops will shortly be completed. Considerable grading has been done about the buildings, and about three miles of road have been improved. About 40 acres of land with a two-story frame house in poor condition have been acquired.

—*Taunton Insane Hospital, Taunton.*—The cottage for male nurses has been completed and accommodates 80 nurses. An extension to the laundry was built and several pieces of new machinery installed. A new power house has been built and thoroughly equipped, including machinery for cold storage. A cottage for 40 patients has been built at the Raynham farm colony. In addition to the above a number of minor improvements have been made.

—*Northampton State Insane Hospital, Northampton.*—An infirmary for male patients has been completed and occupied. It is admirably adapted for the care of the sick and infirm. A small addition to the main barn has been built. Considerable work has been done in constructing cement and asphalt walks and flooring, and many thousand feet of sewer, pipe lines, and electric conduits have been laid. A new system of telephones has been installed which is giving great satisfaction. A plan of the hospital giving, in different colored inks, all the underground systems of water pipes, fire lines, sewers, pipes for surface and roof water, steam pipes and returns, and electric wires, has been drawn and has already proved very convenient.

—*School for the Feeble-minded, Waltham.*—Two new dormitories have been completed, furnished, and occupied. Two nurses' homes, each providing single rooms for 21 nurses or attendants, have been put in service. Additional fire protection has been secured by changes in construction of the buildings and by the location of a number of hydrants. A new barn has been built to replace the one destroyed by fire April 20, 1905.

—*Westborough Insane Hospital, Westborough.*—The third cottage for women nurses was opened in December, 1904, and the additional accommodations make it possible to make a number of changes such as an increase in the number of nurses and a reduction in their hours of service. The construction of two cottages for male nurses makes the same changes possible for them. A building for the male employés, the pathological building, a new laundry, a building for disturbed patients, and a residence for the superintendent have all been constructed and are occupied.

—*Worcester Insane Asylum.*—A new heating and power plant is giving very satisfactory service. The new building for 25 men at the No. 1 colony, a dormitory building at the No. 2 group, and a building for 100 women have all been completed and occupied.

MICHIGAN.—*Michigan Asylum for the Insane, Kalamazoo.*—At the last session of the Legislature the sum of $16,500.00 was appropriated for raising the roofs and finishing a third story over the first longitudinal wings on each side adjoining the center building of the department for women. These additions have been completed and are now occupied by forty-four nurses. The change takes this number of nurses out of the wards at night and increases our capacity for patients by an equal number at a small per capita cost.

A store house addition, thirty by sixty feet, constructed of brick, with basement and space above for enlarging the tailor shop and sewing room has just been completed.

The Edwards Hospital, named in honor of the late Medical Superintendent, Dr. William M. Edwards, is the last asylum acquisition in the way of new buildings for patients and has been open about three months. It has accommodation for seventy men and is designed for an admission ward.

Plans for a similar hospital for one hundred women are under way and the work of construction will be begun as soon as the appropriation is available, about the first of June.

Dr. Herman Ostrander of the medical staff is spending a two months' leave of absence in Florida.

—*Eastern Michigan Asylum, Pontiac.*—The Eastern Michigan Asylum has recently completed the installation of a new system of fire-protection, consisting of an Underwriters' pump, of 1000-gallon-a-minute capacity; a new system of mains leading to hydrants on the grounds and to risers at

both ends of each hall. The pump maintains a constant pressure within the pipes. The uncoiling of hose from reels and the opening of a valve gives water immediately at fire-fighting pressure. This system of piping is independent of the domestic supply of water. The system is so arranged that it can be worked independently of, or conjointly with, the city mains.

A complete fire-alarm system installed by the Gamewell Company will complete the protection.

On the 1st of July building operations will be started for an infirmary building for women, with a capacity of 100 patients.

MISSISSIPPI.—*East Mississippi Insane Hospital, Meridian.*—The Legislature has just made an appropriation for one new cottage for women patients, also an appropriation for an infirmary for both classes. These additions will relieve the crowded wards, and give facilities for treating the sick, and caring for surgical cases. Other minor improvements are in contemplation which will add to the comfort and safety of the institution.

MISSOURI.—*State Hospital, No. 4, Farmington.*—There will be erected during the summer an additional cottage with a capacity for 60 patients, and an auditorium costing about $2500.

NEW JERSEY.—*State Village for Epileptics, Skillman.*—During the past year an adjoining farm containing 279 acres has been added, so that the whole tract of land now comprises 779 acres. The men's building, accommodating 18 patients, the women's building, accommodating 32 patients, and the children's building, accommodating 50 of each sex, have been completed and are occupied. The laundry has been completed and furnished with modern electric machinery. A new cow-barn and silo have been built. The telephone system has been thoroughly overhauled. The sewers have been extended to the new buildings. An additional story has been added to the industrial building. A concrete reservoir has been constructed near the wells, and a new boiler, air lift, and horizontal pump have been installed in the power house where a temporary extension has been built to protect and cover the new machinery.

—*The New Jersey State Hospital at Morris Plains.*—A nurses' home, built to accommodate 54 female nurses, is one of the recent improvements added to this hospital. The building is substantially of red brick with yellow brick trimmings and is situated directly in front of and about 500 feet distant from the south wing of the main building. It is a three-story building and contains reception rooms, library, parlor, a large hallway and 27 bed-rooms. The building is heated from the central heating plant; it is lighted by gas and electricity and fitted with bathrooms and toilet rooms which are good examples of modern plumbing.

A new case record system has been installed in one of the rooms adjacent to the medical offices on the administration building. The room has been specially fitted for the purpose by tiling the floor and fitting it up with specially designed steel cabinets. The system employed is known as "the vertical filing system" with card indexes and cross indexes. Everything pertaining to each individual case, including the court order, the commitment papers, the history, the physician's examination, charts, physician's notes, pathological and bacteriological reports, nurses' notes, are all filed in one envelope in each case, and arranged both alphabetically and consecutively by number. The cases in the hospital are filed by themselves and are known as "active cases," while the others are known as "inactive cases."

A new hydraulic elevator has been put in, which is in operation. This greatly facilitates the work of transferring old and feeble or very sick patients from one ward to another.

Improvements contemplated this year, and for which appropriations by the Legislature have been asked and granted, are an electrical room equipped with a static machine and all the necessary modern electrotherapeutic appliances, a room properly equipped for hydro-therapeutic treatment and for the examination of the eye, ear, nose and throat and supplied with the necessary instruments for the treatment of diseases of these organs.

The laboratory facilities are to be improved by the addition of scientific instruments used in a thorough examination of milk and water.

The Legislature has also been asked to appropriate money for the equipment of the new laundry building with machinery for washing, drying and ironing the patients' clothing. This appropriation has been granted.

Dr. James W. Smith, the vice-president of the board of managers, and chairman of the medical committee, died of pneumonia on the 29th day of March, 1906. He was first appointed in 1891 and has been very active in all matters pertaining to the welfare of the hospital. His death is a great loss to the institution, and it will be a difficult matter to find as able and efficient a man to take his place on the board of managers.

NEW YORK.—*Craig Colony for Epileptics, Sonyea.*—Dr. James F. Munson, a graduate in arts and medicine of the University of Michigan, at Ann Arbor, has been appointed resident pathologist at The Craig Colony for Epileptics, vice Dr. Onuf. Dr. Munson will take up his duties June 1, next.

The pay of all graduate nurses at the Colony was increased last October to $35.00 a month in addition to maintenance. The result has been a decided improvement in the character of the service with fewer resignations than formerly. No graduate nurse has left the Colony since that time unless it was to accept a higher position.

Five new cottages to accommodate about one hundred and seventy-five

patients are under construction at the present time. It is not expected that they will be ready for occupancy under eighteen months.

The Legislature has passed a bill appropriating $300,000 for accommodations for 600 to 700 additional patients at the Colony. When these accommodations are ready the total capacity of the Colony will be for 1900 patients. The census of the Colony, April 1, 1906, was 1,050.

—*Dannemora State Hospital, Dannemora.*—A stone building has been completed with a basement for a laundry, sewing room and storage; a first floor dining hall with a seating capacity for five hundred; and an assembly hall on the second floor. The second floor, however, will be used as an infirmary for some time, as no appropriation for an infirmary has been made as yet, and the buildings thus far completed are seriously overcrowded.

If the necessary appropriations are made by the present Legislature, work will soon commence on a new ward building; a new stable will be built, further grading done, and sidewalks laid.

There is a steady gain in the patient population of from twenty-five to thirty each year.

—*Gowanda State Homeopathic Hospital, Gowanda.*—A new superintendent's residence and staff house were completed last fall and are occupied. The two floors in the administration building thus vacated are to be used as wards. Contractors are at work renovating them, and it is expected that they will be ready for occupancy by June 1. This includes a second floor on the corridor and a second floor in the annex building to be used as sitting rooms for these patients.

The new nurses' home was completed during the past year and has a capacity for 150 nurses.

—*Hudson River State Hospital, Poughkeepsie.*—The census is now 2216. In January 100 patients—50 men and 50 women—were transferred to the St. Lawrence State Hospital, Ogdensburg, N. Y.

Two sun rooms for the tubercular cottages, 4 and 5, have been added and will soon be ready for use. Cottages 4 and 5 have also been renovated throughout. New steel ceilings have been added; new floors in kitchens and dining-rooms and pantries, and where much needed, on the wards. These cottages have also been painted throughout and new electric wiring has been placed in them.

Through the instrumentality of the Jesuit Fathers of St. Andrew's College on the Hudson, a small chapel has been built at the cottage department for the use of the patients and employés.

An infirmary for men at the central group, to accommodate 76 patients will soon be ready for occupancy.

Wards 26 and 27 have been renovated throughout and are now being painted.

Ward 10 has been painted and a new carpet laid.

A contract is being let for the installation of a fire alarm system.

The new amusement hall is well under way and will be ready for use by fall.

The staff house and the superintendent's house are now ready for occupancy. The rooms vacated by the Superintendent will be renovated and used for patients.

Plans have been drawn and a site chosen for a building to accommodate 500 quiet, chronic cases of insanity.

Plans have also been drawn for the building of an acute hospital to accommodate 80 patients—40 of each sex. The Legislature will, in all probability grant the money for the erection of this building at its present session.

A fire escape has been added to the administration building.

A cold storage plant is now being installed.

Since the installation of the new filtration plant the general health of the patients has been remarkably good, and distillation of drinking water has been abandoned.

—*Kings Park State Hospital, Kings Park, Long Island.*—New sun parlors have been completed on the two tubercular cottages, also on buildings "C" and "D."

A hydrotherapeutic outfit with additional bathing facilities has been placed on the women's hospital ward.

—*Manhattan State Hospital, Ward's Island, New York City.*—Since the last Summary was issued, many changes have occurred in the administrative features of this hospital. After giving his entire professional life to the service of this institution and having administered its affairs during its various changes that have taken place in the last 20 years, the Superintendent, Dr. Emmet C. Dent, died suddenly of heart disease the morning of January 12, 1906. This affliction came as a severe shock to the hospital. Dr. Dent, however, before his death successfully accomplished the consolidation of the two hospitals and inaugurated many alterations and improvements at the men's division, which were under way at the time of his death.

The modifications in the interior of the main building (men's division) amount to practically the remodelling of the establishment. To be in harmony with recent views which favor the concentration of patients as well as industries on economical grounds, ward dining-rooms have been abolished, and in their stead four large congregate dining-rooms have been opened. The largest accommodating 450 patients, occupying the entire central building, embracing four floors from the basement to the top floor, was formerly used one-half as a church and the other as a gymnasium. The departure has been successful viewed either from the standpoint of

economy or convenience. The discarded ward dining-rooms have been turned into dormitories, and the hospital has by this arrangement acquired an increased capacity of 200 beds.

Psychiatry in the very widest sense continues to show unremitting progress. The enormously large admission rate requires for its proper study and classification an unusually large medical staff. To this work the physicians devote their entire time, and a staff meeting heralds the day's work six times a week, at which every new case is presented, and with his complete history is analyzed and criticised by the entire staff. Every point, plain or obscure, is drawn out, and by this means extremely thorough psychiatrical work is done. The patient's psychosis being established he is dismissed and assimilated into the vast number resident in the hospital until discharged from hospital care. This extraordinary amount of study; care, rest and feeding is resulting in shortening considerably in many cases the period of residence in the hospital.

Hydrotherapy continues to prove its value among many different classes of men and women patients, but it is among the acute insane particularly that its therapeutic worth is most markedly demonstrated. The use of hypnotics among the acute disturbed has been largely superseded by the use of hot or warm tub and shower baths. Selected cases of this class are also treated by the hot, wet, and dry pack, and that each method has its own distinct value when scientifically applied is being largely demonstrated in the wards of both divisions. Hydrotherapy is of equal value among that large class of inactive patients of defective terminal circulation. In many such cases the Scotch douche has proved to be more efficacious than any other stimulating or tonic treatment employed. In the intoxication psychoses and in cases with renal diseases or other conditions requiring prompt and general elimination, the skin has been shown to be the great eliminating agent. Stimulation by the use of the hot-water bath is always followed by a fan or circular douche. When specially indicated, the perineal bath, rain bath, or both hot and cold tub baths are given. All the baths are given on physicians' prescriptions only; the temperature and duration of the bath, as well as the pressure of the water, is in each instance indicated. The bath master, men's division, who is a graduate nurse and who has had in addition a special course in hydrotherapeutics, gives all baths personally. As an adjuvant to hydrotherapy, massage has a permanent place in the therapeutic measures. A general massage of from 30 to 45 minutes is found to stimulate surface circulation, to relieve an overtaxed heart, and so promote general metabolism that in several specific cases its effect has been most gratifying.

As for some years past, the tuberculous patients are segregated with gratifying results as to their improvement. A patient found with the symptoms of tuberculosis, whether in the wards or newly admitted, is immediately examined, and if found to be tuberculosis, is at once sent to the camp. This energetic and precautionary method has brought about a

marked diminution, and the life in the open air with liberal diet and bright, cheerful surroundings has brought about many recoveries and marked improvement in a large number.

The following is a memorandum of special improvements completed or started during the past six months:

A wooden pavilion under construction at the time of the last report has been completed.

Also repairs to the men's home—east division, including new spray baths, repainting, repairing of floors and new cork carpet for the corridors.

The changes at kitchen No. 4 have been completed and the new cooking apparatus has been installed.

Material has been received and a new telephone system is being installed in the east division, also a line connecting the east and west.

The following wards in the east division have been repainted: 38, 39, 42, 46, 48, 52, 54 and 55.

New plumbing work has been installed in wards 37, 40 and 43, and this work is under way in wards 48, 52 and 55 and in wards 59, 60 and 61.

The three floors and basement of the south end of Main building center have been converted into congregate dining-rooms and all the ward dining-rooms discontinued in this building.

A new steam fire whistle is being installed at the power house.

A new engine and generator has been allowed and ordered to provide an addition to the lighting plant.

An estimate has been approved providing for the re-wiring of the laundry irons and adding additional irons.

A new mortuary has been built.

Additional equipment has been allowed for kitchen No. 3, including one cook's table, one meat chopper, one portable brick oven and several smaller items.

Clothes rooms have been built in all the wards of the main and east buildings, these buildings never having been provided with clothes rooms.

Machinery for manufacturing tinware has been provided for the tin shop.

A hot water heater has been provided for the staff house.

—*Rochester State Hospital, Rochester.*—The new buildings of this hospital for the accommodation of 100 acute, 300 chronic, and 300 infirm cases have been completed and occupied throughout the past fall and winter. The equipment of the new surgery, in connection with the reception service, has now been nearly completed. Sterilizing apparatus is to be installed in connection therewith during the next few weeks. The hydrotherapeutic division is also in process of completion and it is hoped that the apparatus will be completely installed during the coming summer.

February 27 and 28 a meeting of the hospital staffs was held at this institution, representatives from the Willard, St. Lawrence, Utica, Bing-

hamton, Buffalo and Gowanda State Hospitals and from the Craig Colony for Epileptics being present. Dr. Adolf Meyer, Director of the Pathological Institute, conducted the meeting. Groups of organic and of atypical involutional cases were presented. A series of mal-formed epileptic brains, removed at autopsy, also afforded a topic of peculiar interest. Dr. Meyer presented a discourse, during the evening of the 27th, on the "present status of our knowledge of the development of the neuro-fibrils," to which the members of the Rochester Academy of Medicine were invited.

—*Rome State Custodial Asylum, Rome.*—A ward building to accommodate two hundred inmates is in process of construction to be completed October 1, 1906.

A farm of one hundred and eight acres has been purchased on which has been established a farm colony.

—*Utica State Hospital, Utica.*—Following the occupancy of the superintendent's residence and staff house, the work of remodeling the old-time officers' quarters in the administration building for the care of patients was undertaken. The second, third and fourth floors of the "center" have been reconstructed under the direction of a representative of the State Architect's office. These changes, which are nearly completed, provide dormitory, day and dining-room accommodation for about one hundred patients.

Work is in progress on ward 25 of the women's division whereby new floors, doors and windows are being provided. Similar work on ward 21 was finished a few months ago.

New electric wiring has been placed on ward 7, the reception ward for men, and two new chandeliers in the assembly hall.

An electric power plant which is being installed, makes it possible to furnish power-motors in the shops connected with the institution, thus doing away with the present shafting, for which a considerable amount of power is needed, and effecting economy in fuel as well as securing safety and convenience.

Proposals have been advertised for looking to the erection of a nurses' home to cost $45,000, the appropriation for which was granted last year. It is expected that work upon this structure will begin soon.

Seventeen tuberculous patients were transferred to the St. Lawrence State Hospital at Ogdensburg in January last.

Hon. W. Stuart Walcott, President of the Board of Managers of the Utica State Hospital, died September 4, 1905. Mr. Walcott had been a manager since 1888, and had been President of the Board since 1895, succeeding the late P. V. Rogers.

—*Willard State Hospital, Willard.*—A contract has been let for the construction of a new cold storage building, with refrigerating apparatus, at a cost of $18,000. New plumbing has been installed at the Pines, and an

appropriation has been made to renew the plumbing at Grandview. A new mangle and extractor have been added to the laundry equipment. The "Button" house, acquired last autumn and situated on the lake shore about one mile from the Main building, is to be enlarged and equipped for the accommodation of twenty-five men patients, who will be employed at the Lake farm. Two new tents have been provided for tuberculous patients—twenty-five of each sex.

NORTH CAROLINA.—*State Hospital at Goldsboro.*—The new building begun last fall is now well on towards completion. It has three stories and a basement and when completed will accommodate 120 patients. This building is for women and will be ready for the admission of patients by August 1.

NORTH DAKOTA.—*State Hospital for the Insane of North Dakota, Jamestown.*—On the 23d of February, Governor E. Y. Sarles of North Dakota visited the Hospital for the Insane and inspected the two new buildings which had been completed a short time previously. In the evening a public reception for the citizens of Jamestown was held at which the Governor was also present.

One of these buildings is intended for the care of the sick women, although pending the time when there will be enough patients of that class to fill it a large portion of it is now being used for an ordinary patients' ward.

On the first or ground floor are located the reception room, autopsy room, dentistry, pharmacy, three store rooms, surgical dressing room, two rooms for disinfecting plant, plunge bath, obstetric room, with nurses' room and sitting room, laboratory, eye and ear infirmary with dark room, the balance of this floor is given up to culinary departments consisting of a large kitchen, dining-room, pantries, store room and closets.

On the second floor are located the visitors' reception room, physicians' office and private office, one large ward room at either end with large bath and toilet rooms, two diet kitchens with dining-rooms, pantries and dumb waiters, several single rooms and day rooms, toilet room, and also elevator space.

The third floor has two large ward rooms with baths and toilet rooms, diet kitchens and dining-rooms, the same as the floor below and nine smaller sleeping rooms for patients with clothes rooms, closets, etc.

On the fourth floor are located the large operating room with etherizing room, store room, toilet and closets and seven rooms with closets for nurses besides a large amount of storage room in the unfinished attic.

Upon the opposite side of the institution is another building to accommodate about seventy-five patients of the chronic working class of the institution, a class which has heretofore been provided with very poor accommodations.

The basement partly under ground is divided into a large dining-room with shower bath, coat rooms, etc.

On the first floor are some individual sleeping rooms and nurses' rooms, and a large sitting room which will be equipped with billiard and pool tables.

On the second floor is a large dormitory accommodating about fifty patients and smaller dormitories for patients requiring separate quarters.

In the attic are commodious quarters for the night watches, as the building will be quiet during a large part of the day and the dormitories beneath these rooms will give rise to nothing to disturb sleep.

The wards provided for women in this institution have been seriously crowded for some years past and the erection of the hospital building is only a piece of tardy justice for those patients. There has been a rapid increase of the male patients in the last two years, so that the erection of the new ward building gives just about room enough for the men, so it will require the erection of another building soon probably on that side of the institution to give sufficient room.

The average number of patients present in the institution for March, 1906, is 469.

OHIO.—*Columbus State Hospital, Columbus.*—The year has been especially fortunate in that the death rate has been small considering the many chronic cases which are under care, and that no epidemics have occurred.

The tubercular tent colony passed through its third year and was somewhat enlarged, 98 cases being treated. This colony and two of the cottages were under charge of graduate nurses. The nurses were given complete charge of the nursing, diet, and general administration of the domestic affairs of their especial charge. The experiment has proved an unqualified success and is an additional proof of the value of the training school.

At the last session of the Legislature just closed, an appropriation was secured for a nurses' home which will be erected on the hospital grounds and which will be the first of the kind in the state of Ohio. One of the old buildings will also be remodeled into a cottage, increasing the capacity about 100.

The cottage for the exclusive care and treatment of the acute curable insane has been in operation nearly a year and proves the advantage of segregating this class of cases. Not coming in contact with the hopeless and incurable class of cases, they seem to improve much more rapidly. A complete hydro-therapeutic plant has been installed in this building, and the various baths with massage are among the most valued forms of treatment. A handsome and efficient operating room has also been put in successful use.

ONTARIO.—*Asylum for the Insane, Mimico.*—Early in the morning of December 31, 1905, No. 2 cottage occupied by female patients was almost completely destroyed by fire which caused a loss of $25,000. The fire occurred about 9 o'clock when most of the patients were at religious

services, and originated from defective electric wiring which had caused the floor to ignite, and had gained considerable headway when discovered. All of the patients were saved and the furniture of the first floor, but that on the second floor was destroyed. The ceilings of the downstairs rooms were covered with sheet metal, which made it difficult to get at the fire, and the flames ate their way along the rafters until they were burned through, when the upper floor fell through. The walls were intact but the roof and floors have had to be replaced.

OREGON.—*Crystal Springs Sanitarium, Portland.*—This institution, devoted entirely to nervous and mental diseases, has just completed a new $30,000 building for its nervous department. The Massachusetts State building at the Lewis and Clark Exposition was purchased, and reconstructed on the original plans, so far as the outside was concerned, although the inside is entirely changed. The building is patterned after the state house at Boston, and as one looks at it from the south, it appears as the center section of the Capitol of Massachusetts. It has ample porch room, overlooking Mount Hood on the east, the city of Portland on the west, and the charming valley of Belmont on the south. Every known apparatus and contrivance for the treatment of nervous patients has been installed in the building, and it promises to surpass in its appointments, every similar institution on the Pacific coast.

A new water plant has been constructed at an expense of over $5000, adding to the hitherto ample supply enjoyed by the patients of this institution. A deep well of over 300 feet has been drilled, and powerful electric pumps have been installed to furnish water for bathing and irrigation purposes.

PENNSYLVANIA.—*State Hospital for the Insane at Warren.*—Appropriations have been secured for the erection of four buildings: an infirmary for women, an annex to the main building for men, the same for women, and an annex to Hygeia. Work has already been begun on these. The new laundry building with a wing in which is situated the pathological laboratory has been occupied for some time and is a great improvement over pre-existing conditions. All of the outside woodwork of the main group was repainted last summer. Considerable grading has been done, a part requiring the raising of the coach house three and a half feet with considerable improvement. The old wooden beds have been replaced with iron. Besides the above many minor improvements have been made.

—*State Asylum for the Chronic Insane, South Mountain.*—An appropriation of $25,000 was secured for the erection of a dormitory for attendants. Contracts have been made for the erection of this building which will contain 32 separate rooms and two commodious sitting rooms. The vacating of the rooms now occupied by attendants will give additional capacity for patients.

The water supply has been protected by the purchase of 275 acres of woodland through which flow the two streams from which the water supply is obtained.

The greenhouses have been rebuilt and arranged for the greater convenience of the patients who use them, and a large amount of quarry work has been done.

RHODE ISLAND.—*Butler Hospital, Providence.*—The four so-called north wards, two for men and two for women, have been thoroughly renovated, all of the old plumbing and wood-work being torn out and even the plaster stripped from the walls. On the women's side the old dining-rooms were converted into commodious water sections with the most approved sanitary arrangements. The old water sections at the southwest end of the wards were removed, additional windows were cut, and at the west end suitable provision was made for dining and service rooms by separating these portions of the wards from the corridors by means of open Gothic screens, the floors of these spaces being tiled.

The dining-rooms of the north male wards were enlarged by removing the back staircase, the space thus gained being utilized as serving rooms. New windows, fireplaces, and mantles were added while the plaster ceilings were replaced by steel.

The fourth stories of these wards have been repaired and are utilized for employés, while new rooms for nurses have been similarly added for nurses in the south dormitory where a new water section has also been provided.

While the above improvements were being made about twenty women patients were housed in a large tent 40x60 placed north of the Duncan ward with smaller tents for a dining-room and a water section. Hot and cold water, steam heat, gas, electric light, and telephone made these temporary quarters most convenient and comfortable.

A fourth story was added to the center building and in this are provided a nurses' lecture room, the laboratory, a room for the clinical director, and an operating room is expected to be added later, the space meanwhile being used as a handicraft shop for the women patients.

VIRGINIA.—*Southwestern State Hospital, Marion.*—At this hospital during the last year, the bathing and water closet annexes to seven different wards have been remodeled, all supply pipes, waste pipes and sewer pipes having been entirely removed; all old floors, fixtures, etc., removed, and new porcelain fixtures, bath tubs, shower and shampoo baths, lavatories, stools, etc., with automatic flushing tanks, placed on beautiful tile floors (white hexagon improved vitreous tile). This has greatly improved appearance and sanitary conditions and gives an up-to-date system.

The wards in this and in all the hospitals for the insane in the State are very much overcrowded, and as the last Legislature failed to provide needed accommodation for the increase of insanity in the next two years,

it is likely that the jails will again be filled, greatly to the disgrace of Christian civilization.

The medical work has been well cared for, and the wisdom of placing the female department under the care of a competent and faithful woman physician has been amply vindicated.

—*Central State Hospital, Petersburg.*—The following improvements have recently been completed:

1—A brick building, on the pavilion style—capacity about seventy-five—for recent or acute cases. There are a diet kitchen, a dining-room, a recreation room, physicians' examining room and broad balconies on the south side. A graduate trained nurse and several assistants care for and nurse the patients much like patients are treated and cared for in a general hospital. Modern hydro-therapeutic appliances will be installed later.

2—An attractive brick building—a comfortable home—for the male attendants.

3—A commodious brick building for amusements, religious services, etc.

4—An industrial building, two stories, and constructed of brick.

5—An abundance of pure water has been procured by an eight-inch well bored through the underlying granite to a depth of three hundred feet.

Tubercular patients have been kept continuously for the past two years in tents, one camp being a mile away from the hospital.

More attention than was formerly done, is being paid to the surgical treatment of cases, but along rational, conservative lines.

Baseball and croquet clubs have been organized among the male and female patients respectively, as additional outdoor recreation and diversion.

Two medical internes will be added to the staff in May.

—*Western State Hospital, Staunton.*—The two thousand-dollar bake house has been completed and works very satisfactorily.

WASHINGTON.—*Western Washington Hospital for Insane, Fort Steilacoom.*—During the past year there has been a steady increase in the number of patients until at the present time the capacity of the old building is taxed to its utmost. This congestion, however, will soon be relieved, as we will in about a week's time be ready to occupy one of our new detached wings which has been recently completed.

The Legislature last year appropriated $101,000 for two detached wings both of which are now finished and ready to be occupied. They are substantial fire-proof structures of brick and reinforced concrete and are convenient and modern in every respect. Each wing will comfortably accommodate about one hundred and fifty patients.

We have recently fenced in about three acres of our grounds, making a very pretty and attractive park in which we have seven fine deer. We expect to soon add to our collection of wild game by the addition of four elk and three buffalo.

The general health of the patients the past year has been above the average and there has been no bad epidemics.

WEST VIRGINIA.—*The West Virginia Asylum, Huntington.*—At present this hospital is caring for 355 patients; 215 males and 140 females.

There is under construction an annex to one of the buildings which will cost $1200, and which will provide accommodation for seventy-five patients.

WISCONSIN.—*Milwaukee Sanitarium, Wauwatosa.*—The two new buildings which have been under construction will be ready for occupancy May 1. The building known as the "West House" will accommodate ten or twelve patients desirous of attractive rooms single or *en suite*, and baths in connection. The other building is a psychopathic hospital, three stories high, and of steel, brick and tile construction—provided with continuous baths, sun rooms, and has an attractive outlook over the Menominee valley from the hillside. Each of these buildings have their own recreation grounds and as complete privacy as may be desired.

—*Milwaukee Hospital for Insane, Wauwatosa.*—Many valuable improvements and additions have been made during the past six months at this hospital; others are in progress and still others projected for the near future.

The cow barn has been enlarged to a capacity of fifty-nine head of cattle, a concrete floor throughout has been provided with water and food trough in the front, and gutter in the rear pitched to drain. Metal stanchions were substituted for wood, and ensilage and manure carriers operating on a track suspended from the ceiling have been installed. Ample ventilation has been provided and altogether the plant is thoroughly modern and sanitary.

The ground fronting on the highway has been graded properly and seeded and will form a beautiful expanse of lawn. Ornamental gate pillars will shortly be erected on foundations already in place and the appearance of the entrance to the hospital will thus be made most attractive. The baseball grounds were also extended considerably and properly graded.

Hose houses were provided for each of the hydrants surrounding the buildings and they are equipped with adequate lengths of hose, ready connected, wrenches in place and a lantern in each house.

A cement brick-making machine was purchased some months ago and the industry fully established, providing much needed and valuable labor for many of the working class of patients. These have turned out an average of one thousand bricks daily besides concrete blocks to the number of fifty. This material will be used in the construction of various buildings projected.

A pavilion with a capacity of twenty-five patients is nearing completion. This is intended for tuberculous cases and is admirably adapted for the purpose, being practically all windows and it is ideally located, facing the east and south.

An apparatus for softening water for use in the laundry, boilers and toilet purposes was installed several months ago, and has been most successful, reducing the water from 31 degrees of hardness to between 6 and 8 degrees. A saving of more than half the soap in the laundry has been effected, the boilers are entirely free from scale and the hot water pipes are no longer occluded by scale as formerly. It has rendered the use of boiler compound unnecessary.

The heating coils and ventilating fans, formerly located in the power plant in the space now occupied by the ice plant, were installed in the basement under the wings and have rendered efficient service in heating the patient's bed rooms during the most severe weather.

The street railway station has been moved to a point east of the main entrance and has been provided with adequate toilet facilities.

Ornamental steel ceilings have been provided in the four visiting wards and they add very materially to their appearance.

An addition to the general kitchen of concrete 32x34 feet is in process of construction at the present time. This addition will be used for the preparing of vegetables, a room for a milk separator, pasteurizer and ice cream freezer and space for a meat-cutting room.

During the winter the work of excavating for a storage building and root cellar was accomplished and the building will be erected during the present season. This building will be 100x40 feet and will contain the carpenter shop, storage for paint, flour, lime and cement, pipes and fittings, etc. The basement and loft will, as stated, be used for the storage of roots and vegetables. As also stated previously, all of the stone and brick used in its construction has been already manufactured by our patients under supervision of an attendant skilled in the work.

Another building projected is a house for the steward and family and part of the medical staff. The same material will be used in its construction.

The rear portion of the administration building, which is occupied by attendants and employés, has been equipped with iron balconies with connecting stairways, stand pipes, etc., thus providing a safe exit from every room on the several floors in case of fire. The iron fire doors on each floor which separate the wings from the administration building have been supplied with an automatic closing device. Negotiations are pending for the provision of Kirker-Bender fire-escapes, one for each two wings, particularly, to facilitate the removal of cases on the hospital wards on the second floor.

Arrangements are in progress for the purchase of a vehicle for transporting patients from their homes to the hospital. Under a recent ruling of the County Judge all patients are brought to the hospital by the nurses of the hospital instead of by the deputy sheriffs. The vehicle decided upon is the Bennett invalid coach, resembling perfectly a landau and bearing no resemblance to the ordinary ambulance.

Appointments, Resignations, Etc.

ANDERSON, DR. PAUL V., appointed Assistant Physician at State Hospital for Insane at Morganton, N. C.

ANDREWS, DR. CLAYTON, formerly First Assistant Physician at Vermont State Hospital at Waterbury, Vt., resigned.

AUSTIN, DR. MARY L., appointed Assistant Physician at Ohio Hospital for Epileptics at Gallipolis, O., March 16, 1905.

BAKER, DR. RAYMOND D., formerly Assistant Physician at New Jersey State Hospital at Morris Plains, N. J., resigned February 16, 1905.

BARKER-COLES, DR. RUTH, appointed Assistant Physician at Westborough Insane Hospital at Westborough, Mass., September 1, 1905.

BARKER, DR. EDITH A., formerly Pathologist at State Hospital for the Insane at Norristown, Pa., died.

BARRETT, DR. A. M., formerly Assistant Physician and Pathologist at Danvers Insane Hospital at Hathorne, Mass., appointed Associate Professor of Psychiatry and Director of the Psychopathic Wards of University Hospital at Ann Arbor, Mich.

BEEBE, DR. ARTHUR, formerly at Illinois Eastern Hospital for the Insane at Kankakee, Ill., transferred to be Third Assistant Physician at Illinois Asylum for the Incurable Insane at Bartonville, Ill.

BLACKFORD, DR. BENJAMIN, late Superintendent at Western State Hospital at Staunton, Va., died December 13, 1905.

BLEDSOE, DR. EDWIN PAGE, formerly Fifth Assistant Physician at Central State Hospital at Petersburg, Va., promoted to be Fourth Assistant Physician.

BLOSS, DR. JAMES R., appointed Assistant Physician at West Virginia State Hospital for the Insane at Huntington, W. Va.

BOLAND, DR. MICAJAH, appointed Interne at Central State Hospital at Petersburg, Va.

BOLLENGER, DR. EDWARD, formerly Assistant Physician at Illinois Eastern Hospital for the Insane at Kankakee, Ill., resigned.

BOODY, DR. GEORGE, formerly First Assistant Physician at Clarinda State Hospital at Clarinda, Iowa, resigned.

BOOMHOWER, DR. ALBERTA S., formerly Assistant Physician at Westborough Insane Hospital at Westborough, Mass., resigned June, 1905.

BOWDISH, DR. PALMER, formerly Clinical Assistant at Manhattan State Hospital at Wards Island, New York, resigned October 18, 1905.

BOYLE, DR. J. C., appointed Third Assistant Physician at Milwaukee Hospital for the Insane at Wauwatosa, Wis.

BROOKS, DR. PAUL B., formerly Junior Assistant Physician at Buffalo State Hospital at Buffalo, N. Y., resigned April 1, 1906, to enter private practice in Norwich, N. Y.

BURNHAM, DR. A. T., formerly Senior Assistant Physician at Illinois Asylum for Incurable Insane at Bartonsville, Ill., resigned.

BURNS, DR. GEOFFREY C. H., appointed Clinical Assistant at Manhattan State Hospital at Wards Island, New York, December 11, 1905, promoted to be Medical Interne February 1, 1906, and resigned February 18, 1906.

CAMPBELL, DR. GEORGE B., formerly Second Assistant Physician at Manhattan State Hospital at Wards Island, New York, resigned June 21, 1905.

CARROLL, DR. ALEXANDER J., appointed Assistant Physician at New Jersey State Hospital at Morris Plains, N. J., March 24, 1905.

CHAPIN, DR. CHARLES W., formerly Clinical Assistant at Manhattan State Hospital at Wards Island, New York, promoted to be Junior Physician, October 4, 1905.

CLAMPIT, DR. LOUIS C., formerly Assistant Physician at Illinois Central Hospital for the Insane at Jacksonville, Ill., resigned.

CLARK, DR. CHARLES H., appointed Clinical Director at Government Hospital for the Insane at Washington, D. C., April 1, 1905.

CLARK, DR. M. F., formerly Assistant Physician at Illinois Northern Hospital for the Insane at Elgin, Ill., resigned.

COLES, DR. WILLIAM W., formerly Junior Assistant Physician at Westborough Insane Hospital at Westborough, Mass., promoted to be Senior Assistant Physician.

CONANT, DR., appointed Pathologist at State Hospital for the Insane at Warren, Pa.

CONNELLY, DR. EDWARD HALE, formerly Fourth Assistant Physician at Central State Hospital at Petersburg, Va., promoted to be Third Assistant Physician.

CONZELMAN, DR. FRED J., appointed Clinical Assistant at Manhattan State Hospital at Wards Island, New York, December 1, 1905, and promoted to be Medical Interne, January 1, 1906.

CURRAN, DR. JOHN D., formerly Medical Interne at Binghamton State Hospital at Binghamton, N. Y., resigned July 1, 1905, to enter private practice.

DE JARNETTE, DR. J. S., formerly Assistant Physician at Western State Hospital at Staunton, Va., promoted to be Superintendent, February 27, 1906.

DEECKE, DR. THEODORE, formerly Pathologist at Utica State Hospital at Utica, N. Y., died December 15, 1905, aged 69 years.

DEMAREST, DR. RUTH, formerly Medical Interne at Rochester State Hospital at Rochester, N. Y., resigned to enter private practice February 1, 1906, and will be appointed Woman Physician at Hudson River State Hospital at Poughkeepsie, N. Y., May 1, 1906.

DENT, DR. EMMET C., late Superintendent of Manhattan State Hospital at Wards Island, New York, died suddenly from heart disease, January 12, 1906.

DOSH, DR. LOUIS P., appointed Clinical Assistant at Manhattan State Hospital at Wards Island, New York, March 20, 1906.

DUNTON, DR. WM. RUSH, JR., formerly Assistant Physician at Sheppard & Enoch Pratt Hospital at Towson, Md., promoted to be First Assistant Physician.

EMRICH, DR. E. L., formerly Assistant Physician at Cleveland State Hospital at Cleveland, Ohio, appointed Second Assistant Physician at Mt. Pleasant State Hospital at Mt. Pleasant, Iowa.

FAISON, DR. W. W., formerly First Assistant Physician at State Hospital at Goldsboro, N. C., promoted to be Superintendent.

FAXON, DR. DORA W., appointed Assistant in the Laboratory at Taunton Insane Hospital at Taunton, Mass.

FETTER, DR. SAMUEL P., appointed Assistant Physician at Ohio Hospital for Epileptics at Gallipolis, O., April 1, 1905.

FISHER, DR. E. MOORE, appointed Assistant Physician at New Jersey State Hospital at Morris Plains, N. J., August 17, 1905.

FITCH, DR. ARTHUR C., formerly Medical Interne at Government Hospital for the Insane at Washington, D. C., promoted to be Junior Assistant Physician.

FOLEY, DR. E. A., formerly First Assistant Physician at Illinois Northern Hospital for the Insane at Elgin, Ill., resigned.

FORDYCE, DR. O. O., elected Assistant Physician at Athens State Hospital at Athens, Ohio.

FRANKLIN, DR. CHARLES M., formerly First Assistant Physician at Sheppard & Enoch Pratt Hospital at Towson, Md., resigned to enter private practice in Baltimore.

FREED, DR. J. W., appointed Assistant Physician at Western State Hospital at Staunton, Va., April 11, 1906.

FRISBIE, DR. R. S., formerly Assistant Superintendent at Asylum for Feebleminded at Lincoln, Ill., resigned.

GARLICK, DR. J. H., formerly Second Assistant Physician at Central State Hospital at Petersburg, Va., resigned, and appointed Assistant Physician at Western State Hospital at Staunton, Va.

GARRISON, DR. W. MILES, formerly Assistant Physician at New Jersey State Hospital at Morris Plains, N. J., resigned January 19, 1905.

GARVIN, DR. ALBERT H., appointed Medical Interne at Manhattan State Hospital at Wards Island, New York, January 2, 1906.

GARVIN, DR. WILLIAM C., appointed Junior Physician at Manhattan State Hospital at Wards Island, New York, October 11, 1905.

GIBSON, DR. GORDON M., appointed Medical Interne at Kings Park State Hospital at Kings Park, N. Y., December 1, 1905.

GLOVER, DR. CHARLES, appointed Assistant Physician at Connecticut Hospital for the Insane at Hartford, Conn.

GRAHAM, DR. ARCHIBALD W., appointed Assistant Physician at Insane Department of Bay View Asylum at Baltimore, Md.

GROUT, DR. DON D., appointed Superintendent at Vermont State Hospital for the Insane at Waterbury, Vt.

HAMILTON, DR. SAMUEL W., formerly Junior Physician at Manhattan State Hospital at Wards Island, New York, promoted to be Assistant Physician, October 1, 1905.

HAMMER, DR. A. L., appointed Interne at Central State Hospital at Petersburg, Va.

HARDEN, DR. JULIA, appointed Assistant Superintendent of the Department for Women at State Hospital for the Insane at Norristown, Pa.

HARDING, DR. GEO. T., formerly First Assistant Physician at Columbus State Hospital at Columbus, O., resigned and appointed Superintendent at National Sanatorium at Tacoma Park, Washington, D. C.

HARDT, DR. H. G., appointed Assistant Physician at Illinois Northern Hospital for the Insane at Elgin, Ill.

HARP, DR. HENRY J., JR., formerly Medical Interne at Manhattan State Hospital at Wards Island, New York, resigned February 1, 1906.

HART, DR. LASHER, formerly Assistant Physician at Rome State Custodial Asylum at Rome, N. Y., resigned to take up the specialty of skin diseases.

HAWKE, DR. WILFORD W., formerly Chief Resident Physician at the Insane Department of the Philadelphia Hospital at Philadelphia, Pa., resigned.

HIGGINS, DR. SPENCER L., appointed Clinical Assistant at Manhattan State Hospital at Wards Island, New York, December 1, 1905, and promoted to be Junior Physician, January 10, 1906.

HILL, DR. RALPH P., formerly Assistant Physician at Department for the Insane of the Western Pennsylvania Hospital at Dixmont, Pa., resigned November 23, 1904.

HOFFMAN, DR. J. J., appointed Interne at Central Indiana Hospital for Insane at Indianapolis, Ind., June 16, 1905.

HOLMES, DR. R. W., formerly Assistant at Ohio Hospital for Epileptics at Gallipolis, O., resigned November 30, 1904, to enter private practice in Chillicothe.

HUTCHINSON, DR. MARCELLO, formerly Superintendent at Vermont State Hospital at Waterbury, Vt., resigned.

HUYCK, DR. CLIFFORD J., formerly Assistant Physician at Westborough Insane Hospital at Westborough, Mass., resigned August 1, 1905, to enter private practice.

HYER, DR. JOHN W., appointed Assistant Superintendent at West Virginia Hospital for the Insane at Weston, W. Va.

IRWIN, DR. JOHN W., formerly Assistant Physician at Athens State Hospital at Athens, Ohio, resigned.

JENKINS, DR. HENRY E., appointed Clinical Assistant at Manhattan State Hospital at Wards Island, New York, November 1, 1905, and resigned December 23, 1905.

JENKS, DR. F. H., appointed First Assistant Physician at Illinois Northern Hospital for the Insane at Elgin, Ill.

JENNINGS, DR. S. M., appointed Third Assistant Physician and Pathologist at Southern California State Hospital at Patton, Cal., April 11, 1906.

JOHNSON, DR. H. W., appointed Medical Interne at Dannemora State Hospital at Dannemora, N. Y.

KAHN, DR. CHARLES, formerly Assistant Physician at Illinois Northern Hospital for the Insane at Elgin, Ill., resigned.

KARPAS, DR. MORRIS J., formerly Medical Interne at Manhattan State Hospital at Wards Island, New York, promoted to be Junior Physician, February 1, 1906.

KINSON, DR. GOODHUE, appointed Assistant Physician at Ohio Hospital for Epileptics at Gallipolis, Ohio.

KLINE, DR. GEORGE M., formerly First Assistant Physician at Mt. Pleasant State Hospital at Mt. Pleasant, Iowa, appointed Resident Physician of the Psychopathic Wards of the University Hospital at Ann Arbor, Mich.

KUNST, DR. ALBERT H., formerly Superintendent at West Virginia Hospital for the Insane at Weston, resigned.

LANGDON, DR. CHARLES H., formerly Second Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y., died November 15, 1905.

LEONARD, DR. EDWARD F., appointed Assistant Physician at Illinois Central Hospital for the Insane at Jacksonville, Ill.

LETT, EDMUND R., appointed Clinical Assistant at Manhattan State Hospital at Wards Island, New York, October 9, 1905, and promoted to be Medical Interne January 1, 1906.

LINVILLE, DR. W. C., appointed Assistant Physician at State Hospital at Goldsboro, N. C.

LOUGHRAN, DR. E. D. B., formerly Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y., resigned January, 1906.

LYON, DR. CHARLES G., formerly Junior Physician at Binghamton State Hospital at Binghamton, N. Y., promoted to be Assistant Physician, May 1, 1905.

MCKENZIE, DR. J. A., formerly Assistant Medical Superintendent at Nova Scotia Hospital at Halifax, N. S., died October 12, 1905.

MACIVOR, DR. ANGUS, formerly Assistant Physician at Columbus State Hospital at Columbus, O., resigned to accept a position in a sanitarium at Marysville, O.

MACDONALD, DR. J. B., appointed Third Assistant Physician at Maine Insane Asylum at Augusta, Me.

MACDONALD, DR. ROBERT S., formerly Medical Interne at Dannemora State Hospital at Dannemora, N. Y., promoted to be Junior Assistant Physician.

MACKIN, DR. CHARLES M., appointed First Assistant Physician at the Hospital for Insane at Clarinda, Iowa.

MACKINTOSH, DR. J. A., formerly Pathologist at Mt. Pleasant State Hospital at Mt. Pleasant, Iowa, resigned.

MASON, DR. WILLIAM, formerly President of the New York State Lunacy Commission, resigned and appointed Superintendent of Manhattan State Hospital, Wards Island, New York.

MARSTELLER, EMLYN H., appointed Clinical Assistant at Manhattan State Hospital at Wards Island, New York, January 4, 1906, and resigned March 22, 1906.

MASON, DR. H. N., formerly Fourth Assistant Physician at Central State Hospital at Petersburg, Va., resigned.

MATTHEWS, DR. ADELBERT C., formerly Medical Interne at Utica State Hospital at Utica, N. Y., appointed Junior Physician at Hudson River State Hospital at Poughkeepsie, N. Y., November 1, 1905.

MICHELL, DR. GEORGE, promoted to be Senior Assistant Physician at Illinois Asylum for the Incurable Insane at Bartonville, Ill.

MILLER, DR. J. F., for more than eighteen years Superintendent of the State Hospital at Goldsboro, N. C., died suddenly of heart disease January 9, 1906.

MILTIMORE, DR. DEAN, appointed Junior Physician at Hudson River State Hospital at Poughkeepsie, N. Y., January, 1906.

MILTIMORE, DR. EDWARD G., formerly Medical Interne at Manhattan State Hospital at Wards Island, New York, resigned December 10, 1905.

MONTGOMERY, DR. CHARLES H., formerly Junior Physician at Manhattan State Hospital at Wards Island, New York, resigned January 20, 1905.

MONTGOMERY, DR. MAXWELL C., appointed Assistant Physician at Rome State Custodial Asylum at Rome, N. Y.

MOON, DR. ROY, formerly Third Assistant Physician at Clarinda State Hospital at Clarinda, Iowa, will be promoted to be Second Assistant Physician, May 1, 1906.

MOULTON, DR. ARTHUR B., formerly Assistant Physician at Northampton Insane Hospital at Northampton, Mass., resigned December, 1904, to enter service of the Pennsylvania Railroad Company.

MUNSON, DR. JAMES F., formerly connected with the pathological department of the University of Michigan, at Ann Arbor, Mich., appointed Resident Pathologist at Craig Colony for Epileptics at Sonyea, N. Y.

NEVITT, DR. C. A., appointed Second Assistant Physician at Eastern Kentucky Asylum for the Insane at Lexington, Ky., February 1, 1905.

NOBLE, DR. ALFRED I., formerly Assistant Superintendent at Worcester Insane Hospital at Worcester, Mass., appointed Superintendent at Michigan Asylum for the Insane at Kalamazoo, Mich.

O'DAY, DR. SYLVESTER, formerly Medical Interne at Manhattan State Hospital at Wards Island, New York, resigned March 17, 1905.

ONUF, DR. B., formerly Resident Pathologist at Craig Colony for Epileptics at Sonyea, N Y., resigned.

OOSTERBEEK, DR. JOHN G., appointed Second Assistant Physician at Illinois Asylum for the Incurable Insane at Bartonville, Ill.

OSBORNE, DR. W. S., formerly Assistant Physician at Hospital for Insane at Cherokee, Iowa, appointed Assistant Superintendent at Detention Hospital for Inebriates at Knoxville, Iowa.

OWENSBY, DR. N. M., formerly Assistant Physician at Insane Department of Bay View Asylum at Baltimore, Md., promoted to be Chief Resident Physician.

PARSONS, DR. FREDERICK W., appointed Second Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y.

PATTRELL, DR. ARTHUR E., appointed Resident Medical Officer at the Colony of Worcester Insane Asylum, Worcester, Mass.

PRITCHARD, DR. WILLIAM B., formerly First Assistant Physician at Ohio Hospital for Epileptics at Gallipolis, O., promoted to be Superintendent.

PULLIAM, DR. JOHN M., formerly Assistant Physician at Longcliff Hospital for the Insane at Logansport, Ind., resigned to enter private practice in Fort Wayne.

PUTNAM, DR. EMMA, formerly Woman Physician at Hudson River State Hospital at Poughkeepsie, N. Y., resigned May 1, 1906.

RANSOM, DR. FREDERICK P., appointed Assistant Physician at Department for the Insane of Western Pennsylvania Hospital at Dixmont, Pa.

RANSOM, DR. FREDERICK P., appointed Assistant Physician at Western Pennsylvania Hospital Department, for the Insane at Dixmont, Pa.

RICE, DR. GRACE E. B., formerly Medical Interne at Northampton Insane Hospital at Northampton, Mass., promoted to be Assistant Physician.

RICHARDS, DR. JOHN S., formerly Clinical Assistant at Manhattan State Hospital at Wards Island, New York, resigned October 1, 1905.

RICHARDSON, DR. DAVID D., late Chief Physician at Department for Men at State Hospital for Insane at Norristown, Pa., died March 6, 1906.

RICKETTS, DR. HENRY E., formerly Medical Interne at Manhattan State Hospital at Wards Island, New York, resigned December 1, 1905.

RIHA, DR. WILLIAM W., formerly Assistant Physician at Insane Department of Bay View Asylum at Baltimore, Md., appointed Assistant Physician at Danvers Insane Hospital at Hathorne, Mass.

ROBBINS, DR. EMMA C., formerly Third Assistant Physician at Asylum for the Chronic Insane at Hastings, Neb., resigned.

RORICK, DR. E. H., formerly Superintendent of Athens State Hospital at Athens, Ohio, appointed Superintendent of the Institution for Feeble-minded Youth at Columbus, Ohio.

RUTTER, DR. H. C., formerly Superintendent at State Hospital for Epileptics at Gallipolis, O., appointed Medical Director of the Department of Nervous and Mental Diseases of the Ohio Sanitarium Co.

SCHWINN, DR. GEORGE H., formerly Junior Assistant Physician at Government Hospital for the Insane at Washington, D. C., promoted to be Assistant Physician.

SHAW, WILLIAM F., formerly Medical Interne at Manhattan State Hospital at Wards Island, New York, resigned January 1, 1906.

SIMS, DR. F. ROBERTSON, formerly Assistant Physician at Danvers Insane Hospital at Danvers, Mass., resigned October 1, 1905, to enter private practice.

SMITH, DR. ALEXANDER L., appointed Medical Interne at Utica State Hospital at Utica, N. Y., January 1, 1906.

SOUTHARD, DR. E. E., formerly Assistant Pathologist at Boston City Hospital at Boston, Mass., appointed Assistant Physician and Pathologist at Danvers Insane Hospital at Hathorne, Mass.

SPARKS, DR. F. R., appointed Fourth Assistant Physician at Clarinda State Hospital at Clarinda, Iowa, and to be promoted May 1, 1906, to be Third Assistant Physician.

SPEIGHT, DR. RICHARD H., JR., formerly Assistant Physician at State Hospital for the Insane at Morganton, N. C., resigned.

STANGLAND, DR. ARTHUR K., appointed Senior Assistant Physician at Illinois Asylum for Incurable Insane at Bartonville, Ill.

STEELE, DR. S. HARION, appointed Superintendent of the West Virginia Hospital for the Insane at Weston, W. Va.

STINSON, DR. H. K., formerly Third Assistant Physician at Maine Insane Asylum at Augusta, Me., resigned to enter private practice.

SULLIVAN, DR. CHARLES B., appointed Assistant Physician at Danvers Insane Hospital at Danvers, Mass., November, 1904.

SWIFT, DR. HENRY M., formerly Assistant Physician at Danvers Insane Hospital at Danvers, Mass., resigned.

TALBOT, DR. ROBERT S., formerly Third Assistant Physician at Central State Hospital at Petersburg, Va., promoted to be Second Assistant Physician.

TEETER, DR. LORTON H., appointed Assistant Physician at Rome State Custodial Asylum at Rome, N. Y.

THOMPSON, DR. CHARLES E., formerly Assistant Physician at State Hospital at Tewksbury, Mass., appointed Assistant Superintendent at State Colony for the Insane at Gardner, Mass., October, 1904.

THORNTON, DR. JESSIE M., appointed Assistant Physician at the Women's Department of the Western State Hospital at Staunton, Va., March 8, 1906.

TODD, DR. R. N., formerly Assistant Physician at Central Indiana Hospital for Insane at Indianapolis, Ind., resigned to enter private practice in Indianapolis, October 31, 1905.

UPTON, DR. WALDO J., appointed Assistant Superintendent at Vermont State Hospital for the Insane at Waterbury, Vt.

VEEDER, DR. W. A., appointed Medical Interne at Rochester State Hospital at Rochester, N. Y., October 1, 1905.

WALKER, DR. GEORGE S., formerly Assistant Superintendent at Western State Hospital at Staunton, Va., resigned March 8, 1906.

WALKER, DR. I. L., formerly Assistant Physician at Central Islip State Hospital, transferred to Rochester State Hospital at Rochester, N. Y., March 1, 1906.

WALLS, DR. FRANCIS, formerly Assistant Physician at Illinois Eastern Hospital for Insane at Kankakee, Ill., resigned.

WASHBURN, DR. PHILLIP C., formerly Junior Physician at Manhattan State Hospital at Wards Island, New York, promoted to be Assistant Physician, October 1, 1905.

WEIGAND, DR. FRANK J., formerly Junior Assistant Physician at Dannemora State Hospital at Dannemora, N. Y., resigned January 1, 1906, to enter private practice.

WELD, DR. J. C., appointed Assistant Physician at Illinois Eastern Hospital for Insane at Hospital, Ill.

WELD, DR. J. E., appointed Assistant Physician at Illinois Eastern Hospital for the Insane at Hospital, Ill.

WETMORE, DR. STEPHEN S. P., appointed Interne at Gowanda State Homeopathic Hospital at Gowanda, N. Y.

WHITNEY, DR. EDWARD W., appointed Assistant Physician at Northampton Insane Hospital at Northampton, Mass.

WILSON, DR. J. F., appointed Assistant Physician at New Jersey State Hospital at Morris Plains, N. J., May 8, 1905, and resigned July 20, 1905.

WILSON, DR. JOHN R., formerly Clinical Assistant at Manhattan State Hospital at Wards Island, New York, resigned December 1, 1905.

WILSON, DR. MILO, appointed Superintendent at Athens State Hospital at Athens, Ohio.

WOOLLEY, DR. HERBERT C., formerly Medical Interne at Willard State Hospital at Willard, N. Y., transferred to Manhattan State Hospital at Wards Island, New York, October 1, 1905.

Pamphlets Received

The Legislative Schemes of the American Medical Association. Reprinted from the National Druggist, St. Louis, Mo., 1906.

The Correct Treatment of Syphilitic Cicatrical Adhesion between the Soft Palate and Posterior Wall of the Pharynx. Jacob Schadle, M. D. From St. Paul Medical Journal, 1906.

Reports of the Trustees and Superintendent of the Butler Hospital. Presented to the Corporation at its Sixty-Second Annual Meeting January 24, 1906, Providence, R. I.

Some Phases of Sectarian Medicine. A. E. P. Rockwell, M. D. Reprinted from the North American Journal of Homeopathy, February, 1906.

Twenty-Seventh Annual Report of the Managers of the Binghamton State Hospital at Binghamton, N. Y., to the State Commission in Lunacy for the year ending September 30, 1905.

First Annual Report of the Manhattan State Hospital to the Board of Managers for the year ending September 30, 1905.

Twelfth Annual Report of the Managers of the Gowanda State Homeopathic Hospital at Gowanda, N. Y., to the State Commission in Lunacy for the year ending September 30, 1905.

Thirty-second Annual Report of Athens State Hospital, for year ending November 15, 1905.

Fifteenth Annual Report of Ohio Hospital for Epileptics for the year ending November 15, 1905.

Twenty-fourth Annual Report of the State Hospital for the Insane at Warren, Pennsylvania, for the year ending November 30, 1905.

Eighth Annual Report of the State Institution for Feeble-minded of Western Pennsylvania for the year ending September 30, 1904.

Twelfth Annual Report of the State Asylum for the Chronic Insane of Pennsylvania for the year ending September 30, 1905.

Annual Report of the Managers of the Western Pennsylvania Hospital, The Department for the Insane at Dixmont for 1905.

Thirty-fifth Annual Report of the Central State Hospital of Virginia (Petersburg) for the year ending September 30, 1905.

Eighteenth Annual Report of the Southwestern State Hospital of Virginia (Marion) for the year ending September 30, 1905.

Annual Report of the Asylum for Chronic Insane, Milwaukee County, for the year ending September 30, 1905.

Biennial Report of the Board of Trustees of Milwaukee Hospital for Insane for two years ending September 30, 1904.

Forty-eighth Report of the Nova Scotia Hospital for the year 1904-1905.

Thirty-eighth Annual Report of the Inspector of Prisons and Public Charities upon the Lunatic and Idiot Asylums of the Province of Ontario, being for the year ending 30th September, 1905.

Report of the Superintendent of the Provincial Hospital at St. John, N. B., for the year 1905.

Annual Report of the Protestant Hospital for the Insane, Verdun, Montreal, Quebec, for year 1905.

Sixty-seventh Annual Report of Columbus State Hospital for the year ending November 15, 1905.

The Robert Garrett Free Hospitals for Children, 1903.

Annual Report of the Asylum for Chronic Insane for the year ending September 30, 1905.

Thirtieth Annual Report of the Managers and Officers of the New Jersey State Hospital at Morris Plains for year ending October 31, 1905.

Eighth Annual Report of the Managers of the New Jersey State Village for Epileptics for year ending October 31, 1905.

Biennial Report of the Board of Trustees and Superintendent of the East Mississippi Insane Hospital to the Legislature of Mississippi for the years 1904-1905.

Twenty-eighth Annual Report of the Worcester Insane Asylum at Worcester for the year ending September 30, 1905.

Twenty-first Annual Report of the Trustees of the Westborough Insane Hospital for the year ending September 30, 1905.

Fiftieth Annual Report of the Trustees of the Northampton Insane Hospital for the year ending September 30, 1905.

Third Annual Report of the Trustees of the State Colony for the Insane at Gardner, Mass., for the year ending September 30, 1905.

Cook County Charity Service Fiscal year 1905.

Fifty-seventh Annual Report of the Board of Trustees and Superintendent of the Central Indiana Hospital for Insane for the year ending October 31, 1905.

Twenty-sixth Annual Report State Hospital for the Insane, Norristown, Pa., 1905.

Thirty-second Annual Report of the Medical Director of the Cincinnati Sanitarium for the year ending November 30, 1905.

Fifteenth Annual Report of the Managers of the Rochester State Hospital for the year ending September 30, 1905.

Sixty-third Annual Report of the Utica State Hospital to the State Commission in Lunacy for the year ending September 30, 1905.

Twelfth Annual Report The Craig Colony for Epileptics, Sonyea, N. Y., 1905.

Thirty-fifth Annual Report Ayr District Asylum, Ayr, 1905.

Report of St. Joseph's Hospital of Baltimore, Md., 1905.

First Annual Report of the Manhattan State Hospital to the Board of Managers for the year ending September 30, 1905.

Reports of the Maine Insane Hospital and Eastern Maine Insane Hospital, December, 1905.

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——— Bacteriological investigations into the pathology of general paralysis of the insane, 658.

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Report of the General Board of Commissioners in Lunacy for Scotland, 171.

Report of the State Board of Insanity of the Commonwealth of Massachusetts for 1904, 170.

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Transactions of the Medical Association of the State of Alabama, 651.

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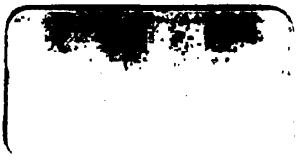
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